

TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1921

No. 127

THE UNITED STATES, APPELLANT,

vs.

BETHLEHEM STEEL COMPANY.

APPEAL FROM THE COURT OF CLAIMS.

FILED AUGUST 29, 1922.

(27854)

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1920.

No. 497.

THE UNITED STATES, APPELLANT,

vs.

BETHLEHEM STEEL COMPANY.

APPEAL FROM THE COURT OF CLAIMS.

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COURT OF CLAIMS.

No. 28693.

BETHLEHEM STEEL COMPANY V. THE UNITED STATES.

I. Petition and amended petition.

On November 16, 1905, the claimant filed its original petition. Subsequently, to wit, on June 22, 1906, the claimant, by leave of court, filed its amended petition. Said amended petition is as follows:

AMENDED PETITION.

(Filed June 22, 1906.)

To the chief justice and judges of the Court of Claims, the claimant, the Bethlehem Steel Company, respectfully shows:

I.

The claimant is a corporation, organized and existing under the laws of the State of Pennsylvania.

II.

On March 20, 1894, letters patent of the United States, numbered 516,768, were granted to Owen F. Leibert, of Bethlehem, Pennsylvania, for an improvement in breech mechanisms for ordnance.

III.

On March 27, 1894, by an instrument in writing, the said Owen F. Leibert, for a valuable consideration, assigned and conveyed
2 all right, title, and interest in and to said invention and letters patent to The Bethlehem Iron Company, a corporation, organized and then existing under the laws of the State of Pennsylvania. The said instrument was duly recorded in the United States Patent Office on April 7, 1894. (See Liber X 49, p. 140.)

IV.

On or about November 21, 1893, and during the pendency of the application of the said Leibert for the said letters patent, the Secretary of War directed a letter to the Commissioner of Patents, requesting him to expedite the action of his office upon the said application.

V.

On or about February 12, 1894, the Chief of Ordnance, U. S. Army, for and in behalf of the United States, entered into negotiations with the said The Bethlehem Iron Company, seeking to obtain the right to manufacture and use the said invention, and on the said date, Captain I. MacNutt, U. S. Army, Inspector of Ordnance, by direction of the Chief of Ordnance, directed the following letter to the said The Bethlehem Iron Company:

"OFFICE OF INSPECTOR OF ORDNANCE, U. S. A.,

"BETHLEHEM IRON WORKS,

"South Bethlehem, Pa., February 12, 1894.

"The BETHLEHEM IRON COMPANY,

"South Bethlehem, Pa.

"GENTLEMEN: I am instructed by the Chief of Ordnance to inform you, relative to the application for a patent filed by Mr. Owen F. Leibert, and concerning which I wrote you on the 7th inst., that he would be pleased to receive at an early date a description and detailed drawings upon a large scale of this invention, which may be used in connection with the patent specification for the consideration of its merits.

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"Respectfully, your obedient servant,

"I. MACNUTT,

"Capt., Ord. Dept., U. S. A., Inspector."

VI.

On March 21, 1894, the said The Bethlehem Iron Company, in compliance with the said request of the Chief of Ordnance, delivered to him, through the said Captain Ira MacNutt, U. S. Army, Inspector of Ordnance, blue-prints of drawings Nos. 5137, 5138, and 5139, illustrating the application of said invention to an 8-inch gun, as and in the manner stated in this letter:

"MARCH 21, 1894.

"INSPECTOR OF ORDNANCE, U. S. A.,

"South Bethlehem, Pa.

"SIR: Answering your letter of February 12th, relating to patent for improved breech mechanism, filed by Owen F. Leibert, and stating that the Chief of Ordnance would be pleased to receive detailed drawings upon a large scale, showing this invention and its application.

"The drawings which we had on hand at the time of receipt of your letter were not altogether satisfactory, and new drawings have been prepared, showing modified plan of application of the patent to 8-inch gun, hence the delay, which we regret.

"We now send you under separate cover blue-prints of our drawings Nos. 5137, 5138, and 5139, showing the proposed application of the improved mechanism to our own 8-inch gun, at the

Redington Proving Ground; also prints of drawings Nos. 5397, 5398, and 5399, showing another plan of applying mechanism to an 8-inch gun.

"We also enclose a description of the mechanism and the relations of the various parts.

4 "Please kindly forward the description and prints above referred to to the Chief of Ordnance.

"Hoping they will convey the information desired, we remain,

"Yours, truly,

"THE BETHLEHEM IRON CO.,

"R. W. DAVENPORT,

2d Vice President."

VII.

On April 9, 1894, the said The Bethlehem Iron Company furnished a description of the said invention to the Chief of Ordnance, through the said Captain Ira MacNutt, U. S. Army, Inspector of Ordnance, as and in the manner stated in the following letter:

"APRIL 9, 1894.

"INSPECTOR OF ORDNANCE, U. S. A.,

South Bethlehem, Pa.

"DEAR SIR: Referring to our letter of March 21st, relating to the application of improved breech mechanism to 8-inch gun:

"We now enclose herewith a description of mechanism as shown by drawings 5397, 5398, and 5399, which should have accompanied the letter above referred to and the drawings furnished, but which was held back on account of needed corrections.

"The re-writing of description was delayed by the sickness of draughtsman having the matter in charge. Will you kindly forward this description to the Chief of Ordnance, with our regrets for delay?

"Yours, truly

"THE BETHLEHEM IRON CO.,

"R. W. DAVENPORT,

"Second Vice President."

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VIII.

On May 7, 1894, by direction of the Chief of Ordnance, his deputy, Captain Charles S. Smith, U. S. Army, directed this letter regarding the said invention to R. W. Davenport, second vice-president of the said The Bethlehem Iron Company:

"NICETOWN, PA., May 7, 1894.

"MY DEAR MR. DAVENPORT: When do you expect to have finished your 8-inch gun fitted with the Leibert breech mechanism?

"I make this inquiry for the reason that Birnie and I have been considering the special feature of this mechanism as a possible application to our 12-inch gun, Model 1892, in place of the form of rack

proposed by Lt. Fletcher, U. S. N., and would like, if possible, to go up to Bethlehem and witness the Leibert rack in actual operation on an 8-inch gun.

"Very sincerely, yours,

"CHARLES S. SMITH,
"Capt., U. S. A."

IX.

On May 9, 1894, the said The Bethlehem Iron Company directed the following letter regarding the said invention to the said Captain Charles S. Smith:

"MAY 9, 1894.

"Capt. CHARLES S. SMITH,

"c/o Midvale Steel Co.,

"Nicetown, Philadelphia, Pa.

"MY DEAR CAPTAIN: Your note of the 7th instant is at hand.

"I regret to say that the manufacturer of the Leibert breech mechanism to be attached to our 8-inch gun has not progressed very rapidly, owing to the fact that we had to procure a special
6 milling machine for cutting the rack. This machine has recently been received, and work on the mechanism will now be pushed as rapidly as possible, and I hope to be able to report its completion at an early date, when we should be very glad to have you and Captain Birnie visit the works for the purpose of inspecting it.

"We are hoping to test an 8-inch Harveyized turret plate for 'Maine' at our proving ground on Tuesday next, May 15th, and will be very glad to see you in Bethlehem on that day, if you would care to be present at the test. You remember that when I last had the pleasure of seeing you you said that you would try and pay us a visit at an early date.

"If the test is postponed from Tuesday, I will wire you; otherwise, if you will come on the train leaving Reading Terminal at 9 a. m. you will be in time.

"Yours, very truly,

"R. W. DAVENPORT."

X.

On June 29, 1894, the said Captain Ira MacNutt, inspector of ordnance, directed this letter regarding said invention to the said The Bethlehem Iron Company:

"OFFICE OF INSPECTOR OF ORDNANCE, U. S. A.

"BETHLEHEM IRON WORKS,

"South Bethlehem, Pa., June 29, 1894.

"78.-3355.

"THE BETHLEHEM IRON COMPANY,

"South Bethlehem, Pa.

"GENTLEMEN: It is the intention of the department to equip our 40-calibre 12-inch rifle, now being assembled at Watervliet Arsenal,

with the Farcot breech mechanism, and it is the desire of the Chief of Ordnance to test, in connection therewith, the plans for which Mr. Owen Leibert has secured a patent. It is proposed to make a rack and pinion after Mr. Leibert's designs, and use them as alternative with like parts of the other design—the fittings being otherwise the same in each case.

7 "Will you please inform me whether the department can secure from you the right to use these plans on this trial gun without claim for compensation?

"Respectfully, your obedient servant,

"I. MACNUTT,
"Capt. Ord. Dept., U. S. A., Inspector."

XI.

On July 5, 1894, the said The Bethlehem Iron Company directed the following letter regarding the said invention to the said Captain Ira MacNutt, U. S. Army Inspector of Ordnance:

"JULY 5, 1894.

"INSPECTOR OF ORDNANCE, U. S. A.,

"South Bethlehem, Pa.

"DEAR SIR: Answering your communication of June 29th, informing us that the Chief of Ordnance desires to test the improved breech mechanism for which patents have been secured by our Mr. Owen Leibert, in connection with the Farcot breech mechanism which is being applied to the 40-caliber 12-inch rifles now being assembled at the Watervliet Arsenal:

"We write to state that we shall be glad to have the department use the rack and pinion covered by Mr. Leibert's design and patent in the one trial gun above referred to, without claim for compensation on our part.

Yours, truly,

"THE BETHLEHEM IRON CO.,

"R. W. DAVENPORT,

"Second Vice-President."

XII.

8 On July 16, 1894, the Chief of Ordnance directed the following letter regarding the said invention to the said The Bethlehem Iron Company:

"ORDNANCE OFFICE, WAR DEPARTMENT,

"Washington, July 16, 1894.

"3355.

"THE BETHLEHEM IRON COMPANY,

"(Thro' Inspector of Ordnance, U. S. A.),

"South Bethlehem, Pennsylvania.

"GENTLEMEN: You will please furnish one additional piece each of forgings for 12-inch gun, Model 1892, marked on the enclosed

blue-print, dated Jan. 28, 1893, viz: Forgings for one translating rack, one pinion, and one rotating segment, on account of contract dated June 24, 1893.

"The forgings, which are intended for the Leibert breech mechanism, will be subject to the usual inspection, and shipped by the inspector at your works to the commanding officer, Watervliet Arsenal, on acceptance.

"Respectfully,

"CHARLES SHALER,
"Acting Chief of Ordnance."

XIII.

On August 30, 1894, the said The Bethlehem Iron Company directed this letter regarding the said invention to the Chief of Ordnance, through his deputy, the said Captain Charles S. Smith, U. S. Army:

"AUGUST 30, 1894.

"Capt. CHAS. S. SMITH,

"Ordnance Dept., U. S. A.,

"Washington, D. C.

"DEAR SIR: At the time of my recent conversation with you
9 in Washington, you referred to a design of breech mechanism for Army 12-inch guns made by the department incorporating the Leibert improvement, and which you stated had been sent us for *Mr. Leibert's inspection and returned.*

"We would like very much to have a drawing of this design on our files, and I write to ask whether you can forward us one or whether it will be necessary to make a formal application for same to the department.

"Yours, very truly,

"R. W. DAVENPORT,
"Second Vice-President."

XIV.

On September 1, 1894, the Chief of Ordnance, by his deputy, the said Captain Charles S. Smith, U. S. Army, directed this letter regarding said invention to R. W. Davenport, second vice-president of the said The Bethlehem Iron Company:

"OFFICE OF CHIEF OF ORDNANCE,

"UNITED STATES ARMY,

"Washington, D. C., September 1, 1894.

"DEAR MR. DAVENPORT:

"I have forwarded you, under a separate cover, five blue-prints, giving details of breech mechanism for the 12-inch B. L. rifle, Model 1892.

"These details cover both the Fletcher and the Leibert modifications of the Farcot breech mechanism, as it is the intention to try both systems with this new 12-inch gun.

"Very truly, yours,

"CHAS. S. SMITH,
"Ord. Dept."

"Mr. R. W. DAVENPORT,

"Second Vice-President Bethlehem Iron Works,
"South Bethlehem, Pa."

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XV.

On October 2, 1894, the said The Bethlehem Iron Company directed this letter regarding said invention to the Chief of Ordnance, through his deputy, the said Captain Charles S. Smith, U. S. Army:

"OCTOBER 2, 1894.

"Capt. CHAS. S. SMITH, U. S. A.,

"Ordnance Dept., Washington, D. C.

"DEAR SIR: Confirming my conversation with you yesterday:

"I write to inform you that we expect to test 12-inch plate, representing side armor 'Texas,' at our proving ground at Redington on Saturday next, and that we should be very glad if you could arrange to be present on that date to see the trial of the plate and to inspect the operation of the Leibert breech mechanism on our 8-inch gun, which will be used for the trial.

"Hoping that we may have the pleasure of seeing you, I remain,

"Yours, very truly,

"R. W. DAVENPORT,
"Second Vice-President."

XVI.

That on November 7, 1891, the said The Bethlehem Iron Company entered into a contract with the United States, represented by the Chief of Ordnance, whereby it agreed to manufacture and deliver to the United States one hundred eight, ten, and twelve-inch breech loading guns, at and for certain sums per gun, to be paid by the United States to the said The Bethlehem Iron Company. The said contract contained this clause:

"It is further stipulated and agreed that the drawings and specifications hereto attached, or any modifications thereof, shall
11 always be subject to such changes as the Chief of Ordnance may deem necessary to remedy ascertained defects in the adopted type of guns or to keep abreast of any improvements that may hereafter be attained in gun construction; the changes to include, if deemed necessary, the entire change of type of gun; but any such changes which materially increase the cost of manufacture shall be paid for at a fair price, to be determined and agreed upon by the

party of the first part and the Chief of Ordnance. Or if said changes shall, in the opinion of the Chief of Ordnance, diminish the cost of manufacture, then a fair amount therefor, to be determined and agreed upon by the party of the first part and the Chief of Ordnance, shall be deducted from the price to be paid for the gun. If the contracting parties can not agree upon the amounts to be paid or deducted on account of changes made by the Chief of Ordnance as provided for hereinabove, then the matter shall be submitted to the Secretary of War for his adjudication and decision, and his decision shall be final, except that the party of the first part may apply to the Court of Claims for redress for injuries claimed under said decisions."

On October 12, 1897, when there remained to be manufactured and delivered fifteen of said guns, the Chief of Ordnance, by the letter next hereinafter set forth, authorized the manufacture of the said fifteen guns in conformity with the Model of 1895, and to include and embody the invention described in the said patent No. 516,568, all as and in the manner set forth in the following letter:

"OFFICE OF THE CHIEF OF ORDNANCE, U. S. A.,
Washington, D. C., October 12, 1897.

"4044 Enc. 11.

"The BETHLEHEM IRON COMPANY,

"(Through Inspector of Ordnance, U. S. A.),

"South Bethlehem, Pa.

"GENTLEMEN: In reply to your communication of the 5th instant, I would state that the department has no objection to your making the last fifteen 12-inch B. L. guns, under your one-hundred gun contract of November 7, 1891, to conform to Model 1895 instead of Model 1888 M2, this change to cover both the new form of breech mechanism and the gun itself. The manufacture of the forgings for the guns may be proceeded with at once. But as it is still a question whether the worm gear of the breech mechanism shall be placed in the upper or lower position, shown on the drawings recently sent you, the forgings for these gears, hinge bolts, and other small parts of the breech mechanism, can not be definitely given as to dimensions at this time.

"Respectfully,

"D. W. FLAGLER,
"Brig. Gen., Chief of Ordnance."

XVII.

On February 1, 1898, the said The Bethlehem Iron Company agreed to furnish and thereafter did deliver to the United States the said fifteen guns, equipped with breech mechanisms, embodying the invention described in the said patent No. 516,768, at the price which the United States by its said contract of November 7, 1891, had agreed to pay for the guns, the difference between the greater cost of manufacturing guns provided with the old breech mechanism

and the less cost of guns provided with breech mechanisms embodying the said patented invention, being taken as compensation to the said The Bethlehem Iron Company for the use of the same, all as and in the manner stated in the following letter:

" FEBRUARY 1, 1898.

" CHIEF OF ORDNANCE, U. S. A.,

" *War Department, Washington, D. C.*

" SIR: Referring to your No 4044 of October 12, 1897, and to a conversation which the writer recently had with you, relating to
13 the change of breech mechanism in the manufacture of the last fifteen 12-inch B. L. guns under our 100 gun contract of November 7, 1891, from the original design to the new design recently adopted by the department:

" We beg to say that we are willing to undertake to make these fifteen guns to conform to Model 1895, instead of Model of 1888 M2, the change to cover both the new form of breech mechanism and the gun itself, and to hold the United States free from all liabilities, so far as these fifteen guns are concerned, on account of patent rights granted by the United States which may affect the new form of mechanism, provided that no modification be made in the price to be paid for the guns as named in the contract on account of the change in the breech mechanism.

" If this understanding is acceptable to the department, we should be glad to receive at your earliest convenience full detail drawings of the gun and breech mechanism of the new design and will at once proceed with the manufacture.

" Respectfully,

" THE BETHLEHEM IRON COMPANY,

" R. W. DAVENPORT,

" *Second Vice President.*"

XVIII.

The reduction of the cost of the said guns occasioned by the adoption and use of the said Model 1895, embodying the said patented invention was at the rate of \$1,294.00 per gun.

XIX.

On March 5, 1898, the said Captain Ira MacNutt, inspector of ordnance, by direction of the Chief of Ordnance, directed this letter to the said The Bethlehem Iron Company:

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" OFFICE OF INSPECTOR OF ORDNANCE, U. S. A.,

" *South Bethlehem, Pa., March 5, 1898.*

" 131-4044 enc. 13.

" THE BETHLEHEM IRON COMPANY,

" *South Bethlehem, Pa.*

" GENTLEMEN: The Chief of Ordnance requests me to inform you that your proposition, as stated in your letter of February 1, 1898,

relative to the change of breech mechanism in the manufacture of the last fifteen 12-inch B. L. guns under contract of November 7, 1891, is accepted by the department. Two sets of blue prints, showing the details of the 12-inch rifle, Model 1895, and its breech mechanism, are forwarded you herewith.

“Respectfully,

“I. MACNUTT,

“Capt., Ord. Dept., U. S. A., Inspector.”

XX.

By reason of the facts hereinbefore recited, the United States recognized the said invention and patent as the property of the said The Bethlehem Iron Company, and that the same was embodied in all guns made in conformity with the said Model of 1895, and agreed to pay to said The Bethlehem Iron Company reasonable royalty for the use which it might make of the said invention.

XXI.

On August 16, 1901, the said The Bethlehem Iron Company, duly assigned and conveyed to the claimant all of its property, rights, and franchises, including the said patent numbered 516,768. Thereafter, on the said day the affairs of the said The Bethlehem Iron Company were wound up and it ceased to exist. On June 6, 1902, by an act of Congress, then approved, entitled “An act making appropriations for fortifications and other works of defense and
15 for the armament thereof, for the procurement of heavy ordnance for trial and service, and for other purposes” (32 Stat. L., 305, 308), it was provided:

“All contracts of the Bethlehem Iron Company of South Bethlehem, Pennsylvania, heretofore made between it and the United States, excepting the contract of November 7, 1891, for one hundred eight, ten, and twelve inch guns shall be completed by its successor, the Bethlehem Steel Company, or its successor, which has acquired or may acquire all of its assets, and has assumed or may assume all its liabilities under the said contracts, and the said Bethlehem Steel Company, or its lawful successor, upon giving good security in the same form and amount, conditioned for the performance by it of the said contracts, shall be substituted therein for the said Bethlehem Iron Company, and be entitled to exercise all rights thereunder which the said Bethlehem Iron Company had or would have had if it had continued in existence.”

Pursuant to the provisions of the said assignment and conveyance and the said act of Congress the claimant became and is the successor of the said The Bethlehem Iron Company.

XXII.

Between March 5, 1898, and the date of the filing of the original petition herein (November 16, 1905), and during and throughout

the period of six years next preceding the filing of said petition, the United States did manufacture and use large numbers of guns, to wit, one hundred and thirty guns, other than those manufactured for and delivered to it by the said The Bethlehem Iron Company or by the claimant, which were and are provided with breech

16 mechanisms containing the said patented invention, and there is now due and owing from the United States to the claimant for and on account of the manufacture and use by the United States during the said period of six years, of breech mechanisms embodying the invention described in said letters patent, royalty at the rate of \$500 for each one of the said breech mechanisms, amounting in all to the sum of \$65,000.00.

XXIII.

The claimant is the only person owning or interested in the claim above set forth, and no transfer or assignment of the same has been made. The claimant is entitled to receive from the United States the sum of sixty-five thousand dollars for and on account of the said claim, exclusive of offsets and just grounds of defense. The claimant has demanded payment of the said sum by the United States, but the same has not been paid nor any part thereof. The claimant has always borne true allegiance to the United States and has not in any way aided, abetted, or given encouragement to rebellion against it.

Your petitioner therefore prays the court for judgment against the United States in the sum of sixty-five thousand dollars and for such further relief as it may be entitled to receive, either at law or in equity, in the premises.

BETHLEHEM STEEL COMPANY,
By E. M. McILVAIN, *President.*

[SEAL.]
Attest:

H. S. SYNDER,

Secretary.

McCAMMON & HAYDEN,

Attorneys for Claimant.

THOMAS W. BAKEWELL,

JAMES K. BAKEWELL,

JAMES H. HAYDEN,

Of counsel.

17 STATE OF PENNSYLVANIA,
County of Northampton, ss:

Before me, the undersigned authority, a notary public duly commissioned and appointed, personally appeared E. M. McIlvain, who, being duly sworn, deposes and says, that he is the president of the Bethlehem Steel Company, the claimant named in the foregoing petition and that his genuine signature is thereunto subscribed;

that no assignment or transfer of the claim therein mentioned or any part thereof or any interest therein has been made except as in said petition stated; and that said claimant is justly entitled to the amount therein claimed from the United States after allowing all just credits and offsets; and that the deponent believes the facts as stated in the said petition are true.

Subscribed and sworn to before me in the county, State, and district aforesaid, this 16th day of June, 1906.

[SEAL.]

WILLIAM E. HORNE,
Notary Public.

Commission expiring Feb. 27, 1909.

18 II. *Defendant's demurrer to amended petition.*

(Filed June 26, 1906.)

Comes now the United States by its Attorney General, and demurs to the amended petition of the claimant filed herein, and for cause of demurrer states:

That the allegations of fact in said amended petition contained do not constitute a cause of action against the United States.

Wherefore, the United States prays judgment and to be dismissed with its costs in this behalf expended.

J. A. VAN ORSDER,
Assistant Attorney General.

III. *Argument and submission of demurrer.*

On March 18, 1907, the demurrer in this case was argued and submitted by Mr. A. C. Campbell, for the defendant, and by Mr. James H. Hayden, for the claimant.

19 IV. *Opinion of the court by Peelle, Ch. J., overruling the demurrer.*

(Filed April 22, 1907.)

PEELLE, Ch. J., delivered the opinion of the court:

To the amended petition herein the defendants demur on the ground "That the allegations of fact in said amended petition contained do not constitute a cause of action against the United States."

The facts well pleaded are that on March 20, 1894, letters patent were granted by the United States to one Owen F. Leibert, who, on March 27, 1894, assigned all his right, title, and interest in and to said invention and letters patent to the Bethlehem Iron Company, the immediate predecessor of the claimant company herein (both being corporations organized under the laws of the State of Pennsylvania), which instrument of writing was duly recorded in the Patent Office of the United States. While the application of said

Leibert for said letters patent was pending the Secretary of War, by letter to the Commissioner of Patents, requested that officer to expedite action upon said application. February 12, 1894, the Chief of Ordnance, through Captain McNutt, inspector of ordnance, by letter of that date to the Bethlehem Iron Company, requested "a description and detailed drawings upon a large scale of this invention, which may be used in connection with the patent specification for the consideration of its merits," which were furnished by said company in the form of blueprints illustrating the application of said invention to an 8-inch gun of its own, and also drawings "showing another plan of applying mechanism to an 8-inch gun," together with "a description of the mechanism and the relations of the various parts."

Further correspondence was had between said Bethlehem Iron Company and the officers of the Government respecting the use and application of the Leibert patent, and on June 29, 1894, said Captain McNutt, by letter of that date to said company, informed it that in equipping a 40-caliber 12-inch rifle, then being assembled at Watervliet Arsenal, with the Farcot breech mechanism it was "the desire of the Chief of Ordnance to test, in connection therewith, the plans for which Mr. Owen Leibert has secured a patent. It is proposed to make a rack and pinion after Mr. Leibert's designs and use them as alternative with like parts of the other design, the fittings
20 being otherwise the same in each case. Will you please inform me whether the department can secure from you the right to use these plans on this trial gun without claim for compensation?" which permission, as requested, was granted as to the "one trial gun above referred to without claim for compensation on our part."

November 7, 1891, the Bethlehem Iron Company had entered into a contract with the Government to manufacture one hundred 8, 10, and 12 inch breech-loading guns, and on October 12, 1897, after the issuance and assignment of said letters patent and when about fifteen of the guns so contracted for remained to be manufactured, General Flagler, the Chief of Ordnance, in a communication to said company, stated that "the department has no objection to your making the last fifteen 12-inch breech-loading guns under your one-hundred gun contract of November 7, 1891, to conform to model 1895, instead of model 1888, M2, this change to cover both the new form of breech mechanism and the gun itself."

The said fifteen guns so manufactured embraced the invention of said Leibert, and in the manufacture thereof it was agreed that there should be no modification or change in the price fixed in said contract of 1891.

That by reason of the facts stated the Government thereby recognized said invention and patent as the property of said Bethlehem Iron Company.

On August 6, 1901, the said Bethlehem Iron Company assigned and conveyed to the Bethlehem Steel Company, claimant herein, all of its property rights and franchises, including said patent, and the

affairs of said Bethlehem Iron Company were duly wound up and it ceased to exist.

On June 6, 1902, Congress passed an act as follows:

"All contracts of the Bethlehem Iron Company of South Bethlehem, Pennsylvania, heretofore made between it and the United States, excepting the contract of November 7, 1891, for one hundred eight, ten, and twelve inch guns shall be completed by its successor, the Bethlehem Steel Company, or its successor, which has acquired or may acquire all of its assets, and has assumed or may assume all of its liabilities under the said contracts, and the said Bethlehem Steel Company, or its lawful successor, upon giving good security in the same form and amount, conditioned for the performance by it of the said contracts, shall be substituted therein for the said Bethlehem Iron Company and be entitled to exercise all rights thereunder which the said Bethlehem Iron Company had or would have had if it had continued in existence." (32 Stat. L., 305, 308.)

Pusuant to the provisions of said assignment and conveyance the claimant herein became the successor of the Bethlehem Iron Company.

That between March 5, 1898, and the filing of the petition herein, November 16, 1905, and within the period of six years next prior to filing said petition, the Government manufactured 130 guns "with breech mechanism containing the said patented invention," for which the reasonable royalty, at the rate of \$500 per gun, amounting to \$65,000, is due and unpaid.

What portion of said 130 guns were manufactured by the United States during the lifetime of the Bethlehem Iron Company and what portion were manufactured since the succession thereto by the Bethlehem Steel Company, claimant herein, does not appear; but that some of them were manufactured by the United States since the organization of the claimant company herein and the assignment thereto by the Bethlehem Iron Company of all its right, title, and franchises, including the invention and patent aforesaid, is evident, as in the twenty-second paragraph of the petition it is averred that "between March 5, 1898, and the date of the filing of the original petition herein (November 16, 1905), and during and throughout the period of six years next preceding the filing of said petition, the United States did manufacture and use large numbers of guns, to wit, 130 guns, other than those manufactured for and delivered to it by the said Bethlehem Iron Company or by the claimant, which were and are provided with breech mechanism containing the said patented invention."

In addition to this, however, the claimant contends that, by virtue of the language in the act of June 6, 1902, above quoted, the Government thereby recognized the claimant company as the successor of the Bethlehem Iron Company, with the right to complete all contracts theretofore entered into between the Bethlehem Iron Company and the United States, "excepting the contract of November 7, 1891, for one hundred 8, 10, and 12 inch guns." But in view

of the fact that some of the guns for which royalty is claimed herein were manufactured by the United States since the claimant became the successor by assignment of the Bethlehem Iron Company, of which the Government, its officers and agents, had notice, we need not now consider the office and effect of said statute respecting the use by the United States of the claimant's patent, for, as to the extent stated, it must be held that the demurrer is not well taken.

The facts set forth unquestionably show that the proper officers of the Government not only knew that letters patent had been issued to Owen F. Leibert for improvement in breech mechanism for ordnance, but that the same, with all the right, title, and interest of said Leibert, had been assigned to the Bethlehem Iron Company, the predecessor of the claimant herein. The Secretary of War requested the Commissioner of Patents to expedite action on the application for a patent and, after the assignment as aforesaid, several letters passed between the Bethlehem Iron Company and the defendants' officers of the ordnance department looking to the use of said invention and patent by the Government and which resulted in the Bethlehem Iron Company granting to the Government the right to use the patent in one trial gun without compensation.

Thereafter by permitting—after testing the mechanism—the use of the patent to the 15 guns manufactured under the contract hereinbefore referred to, the claimant contends that the Government thereby recognized the invention and patent as the property of the Bethlehem Iron Company. That is to say, that the proper officers of the Government recognized that said invention was the private property of said company, and that therefore for any subsequent use of said invention and patent by the Government a contract was implied to make reasonable compensation therefor under the ruling of both the

Supreme Court and this court.

22 In the case of *United States v. Lynah* (188 U. S. R., 445, 464) the court, after reviewing fully the authorities respecting the right of the Government to take private property for public use, said:

“The rule deducible from these cases is that when the Government appropriates property which it does not claim as its own it does so under an implied contract that it will pay the value of the property it so appropriates. It is earnestly contended in argument that the Government had a right to appropriate this property. This may be conceded, but there is a vast difference between a proprietary and a governmental right. When the Government owns property, or claims to own it, it deals with it as owner and by virtue of its ownership, and if an officer of the Government takes possession of property under the claim that it belongs to the Government (when in fact it does not) that may well be considered a tortious act on his part, for there can be no implication of an intent on the part of the Government to pay for that which it claims to own. Very different from this proprietary right of the Government in respect to property which it owns is its governmental right to appropriate the property of indi-

viduals. All private property is held subject to the necessities of government. The right of eminent domain underlies all such rights of property. The Government may take personal or real property whenever its necessities or the exigencies of the occasion demand. So the contention that the Government had a paramount right to appropriate this property may be conceded, but the Constitution in the fifth amendment guarantees that when this governmental right of appropriation—this asserted paramount right—is exercised it shall be attended by compensation.

“The Government may take real estate for a post office, a courthouse, a fortification, or a highway; or in time of war it may take merchant vessels and make them part of its naval force. But can this be done without an obligation to pay for the value of that which is so taken and appropriated? Whenever in the exercise of its governmental rights it takes property, the ownership of which it concedes to be in an individual, it impliedly promises to pay therefor. Such is the import of the cases cited as well as of many others.”

Following those authorities the court, in the case of *Alfred J. Brooks v. The United States* (39 C. Cls. R., 494, 502), said:

“We think it may be regarded as settled law that where an officer of the Government, having authority to act, takes or appropriates to public use property, admitting it to be private property, an implied contract will arise to make compensation.”

Nor will the Government, where it takes property for public use, conceding it to be private property, be heard to say that because there was no promise to pay therefor no contract is implied, as annexed to the use of property so taken without claim of ownership is an implied promise to make reasonable compensation. *McKeever v. United States* (14 C. Cls. R., 396) (affirmed by the Supreme Court without an opinion); *United States v. Bigby* (188 U. S., 401, and authorities there cited); *United States v. Palmer* (128 ib., 262), and *United States v. Harvey Steel Company* (196 U. S., 313) affirming this court (38 C. Cls. R., 662).

23 If as averred in the petition the Government appropriated to public use the invention for which the claimant owned the patent, it did so knowing it was private property, and having used the patent without claim of ownership and without objection from the claimant or its predecessor, a contract thereby arose to make a reasonable compensation therefor.

In *Harley v. United States* (39 C. Cls. R., 105, 114), affirmed 198 U. S., 229, 234, where the court respecting an implied contract said:

“In the case at bar the Court of Claims finds that the appellant ‘supposed and understood that he would be entitled to compensation, and that it would be allowed and paid by the Secretary of the Treasury’; but it also finds that ‘on the part of the Secretary and Chief of Bureau (Engraving and Printing) it was supposed and understood that the claimant (appellant), being an employee of the Treasury Department, would neither expect nor demand remuneration.’ That there was ‘a coming together of minds’ is therefore excluded

by the findings. And the use of the device can not give a right independent of the understanding under which it was used."

The use of the patent in that case, it was supposed and understood, would be without compensation, because the owner of the patent was at the time in the employ of the Treasury Department; and as there was no use of the patent independent of that understanding it was held that no contract could be implied to make compensation.

In the present case there is nothing to indicate that the claimant or its predecessor did not expect compensation for the use of the invention, and the contention of the Government that because the claimant or its predecessor had no knowledge of the use by the Government of its patent at the time the 130 guns were being manufactured—for which royalty is claimed—therefore no promise to pay can be implied is not well founded for the reason that the use of the invention had been tendered to the Government by the claimant's predecessor prior thereto, and the mechanism had been tested and actually used by the Government. The mechanism was specially adapted and designed for large guns—such as used by the Government—and the Government had recognized private ownership in the patent.

With such knowledge on the part of the officers of the Government, respecting the private ownership of the patent, it would be a monstrous doctrine to hold that because the owner had no knowledge of the use of its patent at the particular time therefore no promise to pay can be implied. If it were so the owner of a patent would be compelled to keep sentinels on guard to learn when vigilant officers of the Government were appropriating his property for public purposes.

From the facts averred in the petition—summarized above—the court must hold that when the officers of the Government appropriated the patented invention, recognizing it as private property, a contract was thereby implied to make reasonable compensation for such use.

For the reasons given the demurrer is overruled and the defendants are required to answer over.

Howry, J., was not present when this case was tried and took no part in the decision.

24

V. *General traverse.*

And now comes the Attorney General, on behalf of the United States, and answering the petition of the claimant herein, denies each and every allegation therein contained; and asks judgment that the petition be dismissed.

JOHN Q. THOMPSON,
Assistant Attorney General.

25

VI. *History of proceedings.*

On May 31, 1911, the court made the following order:

This cause came on to be heard on claimant's motion filed March 8, 1911, for a rule upon the honorable the Secretary of War to furnish

for use as evidence in this cause certain information of record in the War Department with respect to the cost of making certain breech operating mechanisms for breech loading rifles, and the cost of making certain parts thereof at the Watervliet Arsenal, and said motion was submitted to the court on briefs filed by counsel for both parties. And thereupon on consideration thereof, it appearing to the court that the object or purpose for which the claimant proposes to offer the said information is to show the value of the use which claimant alleges the Government has made of the invention described and protected in and by the patent in suit (United States Letters Patent No. 516,768).

It is, hereby, this 31st day of May, 1911, adjudged and ordered that the decision of this court upon the said motion be postponed until the decision of the following questions at issue in this cause: (1) Whether the transactions of the claimant and the United States with respect to the adoption and use of claimant's said alleged patented invention, were such as to create, by implication, a contract whereby the United States agreed to pay the claimant reasonable compensation for any use that it might make of the said alleged patented invention; (2) whether the patent in suit No. 516,768 is valid; (3) whether the United States has used the claimant's said patented invention as alleged, and upon the decision of these questions each party to this cause shall have the right to adduce evidence with respect to the value of the alleged use of the said invention by the defendant.

26 On May 11, 17, and 18, 1916, the case was argued and submitted by Messrs. James H. Hayden and Clarence P. Brynes, for the claimant, and by Mr. Henry C. Workman, for the defendant.

On June 11, 1917, the court filed tentative findings and ordered that each party file their objections and amendments desired thereto on or before September 20, 1917.

On September 28, 1917, by leave of court, claimant filed objections to the court's tentative findings.

On September 29, 1917, the defendants filed a statement on the court's tentative findings.

VII. *Argument and submission on tentative findings.*

On December 5 and 6, 1917, this case was argued and submitted on tentative findings by Messrs. James H. Hayden and Clarence P. Brynes, for claimant, and Mr. Henry C. Workman, for defendant.

27 VIII. *Findings of fact and opinion of the court by Booth, J.*

(Entered April 8, 1918.)

This case having been heard by the Court of Claims, the court, upon the evidence, makes the following

FINDINGS OF FACT.

I.

The claimant, the Bethlehem Steel Co., is a corporation organized and existing under and by virtue of the laws of the State of Pennsylvania.

II.

On November 7, 1891, the defendants, by and through the Ordnance Bureau of their War Department, contracted with the Bethlehem Iron Company, a Pennsylvania corporation, for the manufacture and delivery by said company of one hundred guns, of 8-inch, 10-inch, and 12-inch caliber, which guns were to be equipped with the usual breech mechanism then being used, known as "Model 1888 M2."

III.

On November 1, 1893, Owen F. Leibert, of Bethlehem, Pennsylvania, and an employee of the said Bethlehem Iron Company, made application for United States letters patent for an improvement in breech mechanism for ordnance, and the said Bethlehem Iron Company immediately notified the said Ordnance Bureau of the War Department of the said Leibert invention and application for patent, and suggested that the bureau have the application made special by the Patent Office.

In compliance with this suggestion the Secretary of War on November 21, 1893, wrote the Secretary of the Interior as follows:

"I have the honor to request that the application of Mr. Owen F. Leibert for patent for improvement in breech mechanism of guns, which application was filed in the Department of the Interior on the 1st instant, No. 489,740, may be made special under rule No. 63 of the Rules of Practice of the Patent Office, the Chief of Ordnance reporting that this invention is deemed of great importance to the Ordnance Department."

Upon this request the examiner in charge of the application was directed to make said application special.

IV.

On March 20, 1894, there were granted and issued to the said Owen F. Leibert, on his said application, United States Letters Patent No. 516,768, hereinafter set forth in finding XII. On March 27, 1894, said letters patent were assigned by the said Leibert to the said Bethlehem Iron Company.

V.

Upon request of the said Ordnance Bureau in February, 1894, full information as to the said Leibert invention and patent was fur-

nished said bureau by the said Bethlehem Iron Company directly after the granting of the patent and its assignment to said company; and by letter of June 29, 1894, said bureau requested of the company permission to use said invention for experimental purposes, and without compensation, on a 12-inch trial gun being manufactured by defendants at their Watervliet Arsenal. This permission was granted by the company by letter under date of July 5, 1894, and plans and drawings were prepared by the Ordnance Bureau for the manufacture of the Leibert mechanism for said purpose.

VI.

On December 23, 1895, while the Leibert mechanism was in course of construction by the defendants at their Watervliet Arsenal for installation and test upon a trial 12-inch gun, under the permission granted by the claimant as set forth in Finding V above, the Chief of Ordnance forwarded to the commanding officer of said arsenal a drawing, dated December 16, 1895, showing a form of mechanism somewhat different in its details from the Leibert mechanism; and in the communication with which the drawing was forwarded he said, with reference to the drawing:

"This shows a third type of rack and pinion, which appears to possess marked merit. It is a modification of the Leibert design, from which it differs mainly in the mode of operating the withdrawal of the block, and in the pitch of the segmental rack to give increased power for rotation."

He also stated in the communication that if the commanding officer should deem this design of mechanism worthy of trial he should manufacture it for trial in connection with the two other patterns of rack and pinion then under consideration. On January 3, 1896, the commanding officer of the arsenal reported that this type or design was deemed superior to the other designs, and that forgings had therefore been ordered for its manufacture, as directed by the Chief of Ordnance. The test of this design of the mechanism proved satisfactory to the Ordnance Bureau, and it was thereafter manufactured and used by the defendants on a number of their guns.

This design of mechanism so used by the defendants was prepared by the chief draftsman of the Ordnance Bureau, John W. Stockett, who at the time had full information as to the character and operation of the said Leibert mechanism and patent; and it was known and referred to sometimes as the "Stockett design," and sometimes as the "Department's design," but more generally as "Model 1895."

Subsequently the said John W. Stockett applied for patents on certain features of this breech mechanism designed by him, upon which applications he was, on March 22, 1898, granted United States Letters Patent Nos. 601,176 and 601,177, which are hereinafter set forth in Finding XIII.

VII.

From time to time during 1894 to 1896, when the Ordnance Bureau was considering different forms of breech mechanism in search of a satisfactory new design for adoption, the said Bethlehem Iron Company wrote the bureau stating that its work on the said contract of November 7, 1891, had progressed to a point where it was necessary for the company to know the form of breech mechanism to be used on the guns the company was making under the contract.

On July 1, 1896, the Ordnance Bureau wrote the company that the department contemplated changing the construction of 8-inch, 10-inch, and 12-inch guns in future manufacture, from the model then being used, to the said "Model 1895," if tests then in contemplation should prove satisfactory; and further saying: "It may be deemed advisable in the future manufacture of the 12-inch guns under your contract of November 7, 1891, to follow this design. A general drawing of the 12-inch B. L. rifle, model 1895, is inclosed herewith for your information."

In reply to the above-noted letter said company on October 5, 1897, wrote the Ordnance Bureau that it might soon wish to proceed with the manufacture of the forgings and breech mechanisms of the last fifteen 12-inch guns of its said 1891 contract, and requested that if any changes were to be made in the design of the breech mechanism the company be furnished, at the bureau's earliest convenience, drawings showing such changes.

On October 12, following, the Chief of Ordnance wrote the company in reply that the department had no objection to the company's making the last fifteen 12-inch B. L. guns under its said 1891 contract to conform to said breech mechanism "Model 1895."

On February 1, 1898, the said company wrote the Chief of Ordnance, stating: "We are willing to make these fifteen guns to conform to model 1895, instead of model 1888 M2, the change to cover both the new form of breech mechanism and the gun itself, and to hold the United States free from all liabilities so far as these fifteen guns are concerned, on account of patent rights granted by the United States which may affect the new form of mechanism, provided that no modification be made in the price to be paid for the guns as named in the contract, on account of change in the breech mechanism."

On March 3, 1898, the Chief of Ordnance, by indorsement thereon, accepted said proposition of the company, of which acceptance the company was duly notified, and the proper drawings furnished it by the bureau; and the said remaining fifteen guns of the 1891 contract were accordingly equipped with the said "Model 1895" design of breech mechanism, the company having purchased a license for the manufacture and use of the mechanisms of the said Stockett patents.

On August 16, 1901, the said Bethlehem Iron Company, by deed of conveyance duly executed, assigned and conveyed to the claimant,

the Bethlehem Steel Company, all of its property, rights, and franchises of every kind and character whatsoever.

Pursuant to said assignment and conveyance the claimant sought recognition by the defendants as the legal successor of the said Bethlehem Iron Company for the completion of the said company's contract of November 7, 1891, which recognition, however, was denied the claimant. Thereupon the said Bethlehem Iron Company formally admitted default by it in the performance of said contract, and on December 14, 1901, defendants entered into an independent contract with the claimant for the completion by it of the remainder of the work of the said Bethlehem Iron Company's said contract. No successorship or privity was at any time recognized by defendants between the claimant and the said Bethlehem Iron Company in the matter of said contracts with defendants or of the work performed by said companies thereunder.

IX.

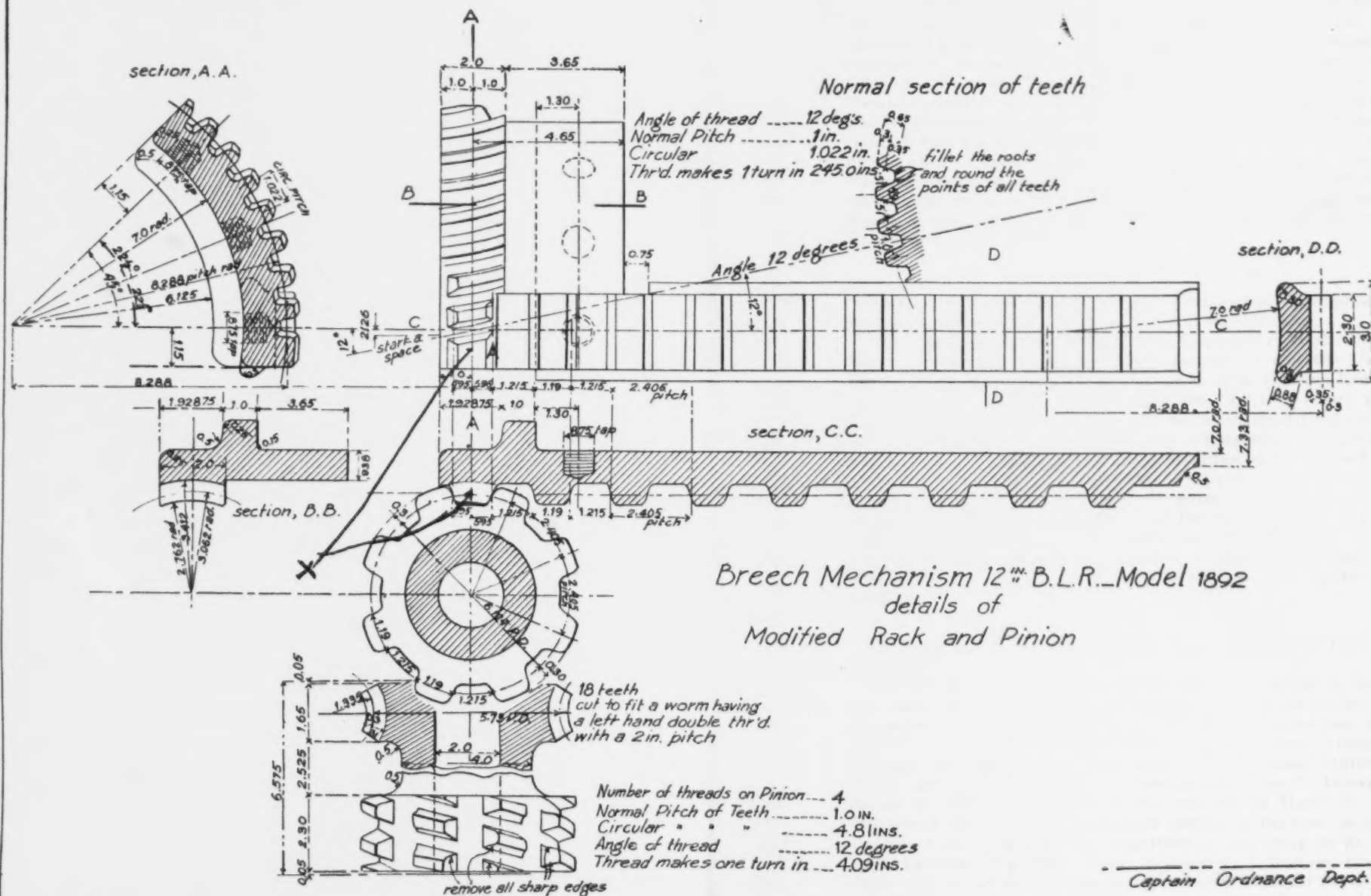
By act of Congress approved June 6, 1902, making appropriations for heavy ordnance, etc., 32 Stats. L. 308, it was provided:

"All contracts of the Bethlehem Iron Company, of South Bethlehem, Pennsylvania, heretofore made between it and the United States, except the contract of November seventh, eighteen hundred and ninety-one, for one hundred eight, ten, and twelve inch guns, shall be completed by its successor, the Bethlehem Steel Company, or its successor, which has acquired or may acquire all of its assets and has assumed or may assume all of its liabilities under the said contracts; and the said Bethlehem Steel Company, or its lawful successor, upon giving good security in the same form and amount, conditioned for the performance by it of the said contracts, shall be substituted therein for the said Bethlehem Iron Company and be entitled to exercise all rights thereunder which the said Bethlehem Iron Company had or would have had if it had continued in existence."

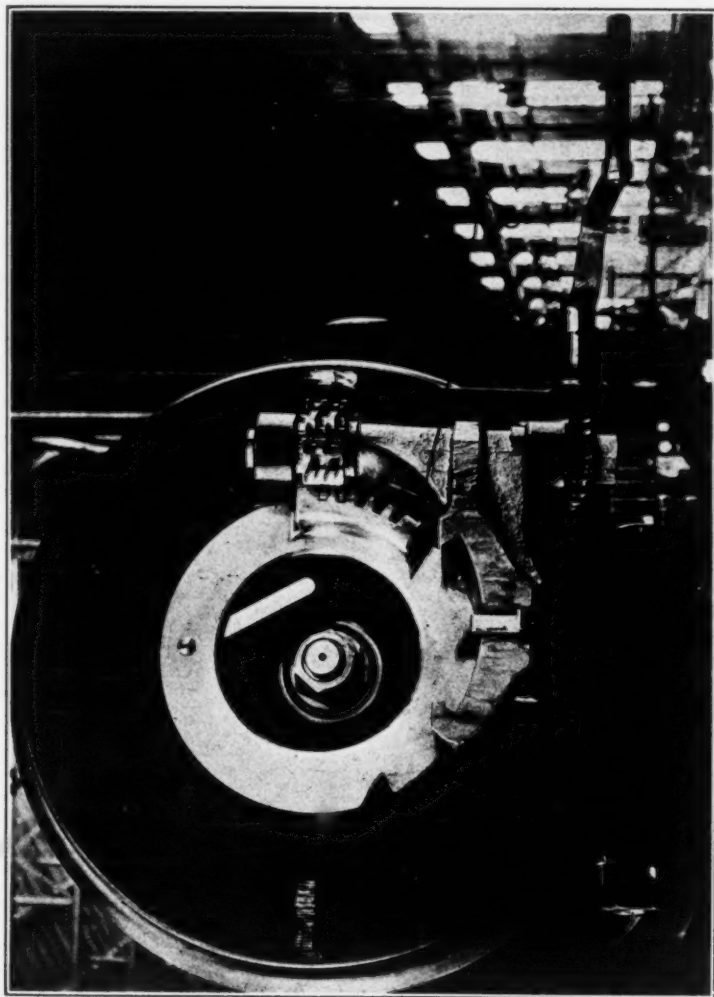
X.

On November 5, 1902, the claimant wrote the Chief of Ordnance as follows:

"Under the department's orders we have been fitting to the 12-inch guns we are making for the department under our contracts of November 7, 1891, and December 14, 1901, the compound gear wheel shown in our prints 7374 and 7381. Copies of these prints are inclosed. We beg also to inclose copy of U. S. Patent 516768 for breech mechanism for ordnance, taken out by Owen F. Leibert on March 20, 1894, and assigned to this company on March 27, 1894. We believe that the wheel we are now putting on the guns, as stated and which we understand the department is also using on its guns built elsewhere, of several calibers, is the same as that described in claim 1, et seq., of the said patent. We should be glad if the department, at its convenience, would give us an opportunity to lay before it more fully our views in this regard."



Captain Ordnance Dept.



Plaintiff's exhibit photograph No. 587. Follows finding XI.



Claimant's exhibit photograph No. 588. Follows finding XI.

31 In reply to the claimant's above-quoted letter, the Chief of Ordnance, on February 25, 1903, wrote the claimant as follows:

"Referring to your communication of November 5, 1902, upon the subject of breech mechanism for guns of 1895 model, I have the honor to state that the claims in the patent of Owen F. Leibert, owned by you, are so much involved with the original designs of Farcot and the patents of F. F. Fletcher and John W. Stockett that this department does not feel that it is in a position to pass on the legal aspect of the case. If the Bethlehem Steel Company will bring suit to establish the points involved, this office will lend its assistance in bringing before the court all documents on hand pertaining to the subject."

On February 27, 1903, the claimant responded to the above letter of the Ordnance Bureau as follows:

"In accordance with your suggestion we have instructed our attorney to bring suit against the department, to establish the points involved."

XI.

The breech mechanism in which the claimant claimed the compound gear wheel of the Leibert patent was being used by the Government, as set forth in Finding X, above, was the said "Model 1895" mechanism referred to in Finding VI hereof, and which is substantially shown by the drawings of the Stockett patent No. 601177, and also by the drawing of December 16, 1895, and the exhibits, "Claimant's Exhibit Photograph No. 587," and "Claimant's Exhibit Photograph No. 588," which drawing and photographic exhibits are as follows:

Fig. 3.

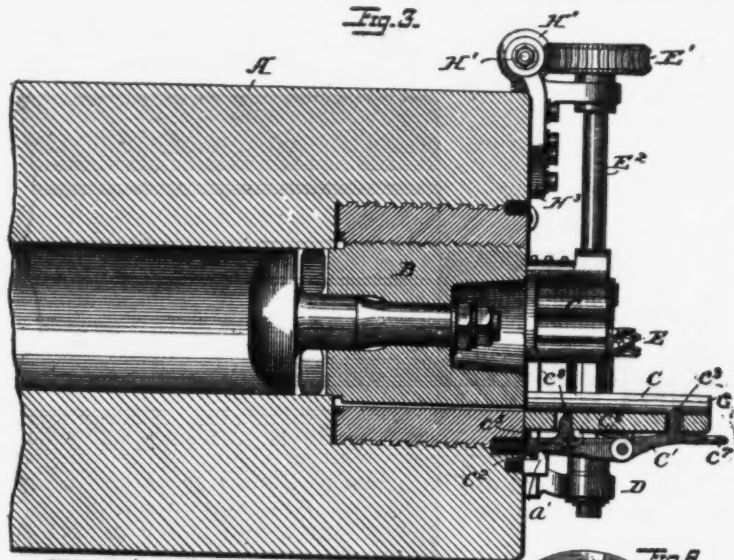


Fig. 5.

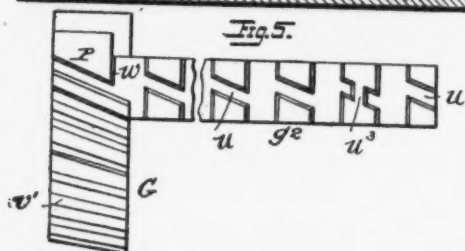


Fig. 6.

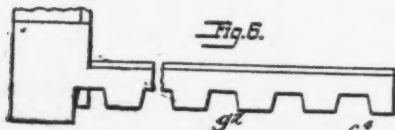


Fig. 9.

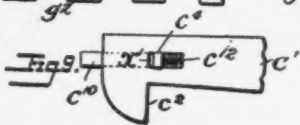


Fig. 8.

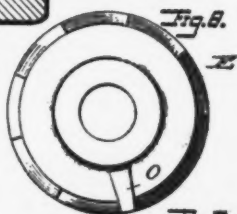
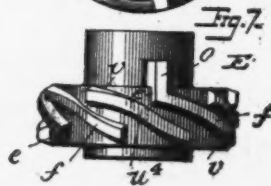


Fig. 7.



35 United States Patent Office—Owen F. Leibert, of Bethlehem, Pennsylvania—Breech mechanism for ordnance. Specification forming part of Letters Patent No. 516,768, dated March 20, 1894. Application filed November 1, 1893. Serial No. 489,740. (No model.)

To all whom it may concern:

Be it known that I, Owen F. Leibert, a citizen of the United States, residing at Bethlehem, in the county of Northampton and State of Pennsylvania, have invented certain new and useful improvements in breech mechanism for guns, of which the following is a specification.

My invention relates to breech mechanisms for guns, and more particularly to that class of breech mechanism wherein the breech-block or plug is unlocked, withdrawn and swung to one side of the breech by a continuously operating mechanism, and whereby the breech-block or plug is swung into position before the breech, inserted therein and locked, also with one continuous motion of the mechanism, and it has for its object to improve the construction and arrangement of such breech mechanism, whereby the breech-block or plug can be more quickly, easily and certainly operated by means which are substantial in structure, positive in operation and mechanically simple of construction, and to these ends my invention consists in the various features of construction and arrangement of parts adapted to operate in the manner hereinafter set forth.

Referring to the accompanying drawings: Figure 1 is an end view of a gun, with the breech closed ready for firing. Fig 2, is a plan view of the same. Fig. 3 is a vertical, longitudinal section of the same. Fig. 4 is an end view of the breech-block or plug. Fig. 5, is a detail view showing the racks attached to the plug. Fig. 6, is a plan of the same. Figs. 7 and 8 are, respectively, side and plan views of a wheel adapted to be used with the rack; and Fig. 9, is an enlarged detail. Fig. 10 is a partial side view showing the breech-block withdrawn.

As before indicated, my invention relates more particularly to breech mechanism for ordnance, although, of course, it may be applied to guns of various sizes and styles, and while it is common to provide some sort of means for accomplishing the general purposes of my invention, and various mechanisms have been provided for doing this it is the object of my invention to improve on all these means known to me, and to provide mechanism which shall overcome some of the difficulties inherent to the usual constructions. It is common to lock the breech-block or plug in the breech of the mechanism, by means of interrupted screw-threads, and I have shown my invention as applied to a gun of such construction, in which, in order to remove the breech-block, it is first necessary to partially rotate the plug, and then withdrew it longitudinally from the breech. This has heretofore been accomplished in various ways and by various means, in some of which there has been a torsion

strain upon the plug as it is withdrawn from the breech onto the tray for supporting it, and one of the principal objects of my invention is to provide a mechanism which shall avoid this torsion strain, and thereby facilitate the movement of the plug, and the operation of the mechanism.

My invention further contemplates improvements in the means for starting the plug and overcoming its adhesion with the breech especially in connection with guns in which a gas-check is used, and in which its requires a greater amount of force to start the breech-block, and the greatest strain is exerted at that moment, and while this and other objects are accomplished by the mechanism which I am about to describe, it will be understood that my invention is not limited to the precise details of construction set forth, as these may be varied by those skilled in the art, without departing from the essential features of the invention, and parts of my invention may be used in combination with each other or with other equivalent devices.

In the breech A, of a gun, of any desirable construction, is an opening with interrupted threads for the reception of the plug, and upon the removable breech-plug B, are correspondingly interrupted threads, whereby the breech-plug may be inserted and secured by a partial rotation, as usual. At the rear of the breech a tray C, is provided for the reception of the plug, which tray is suitably supported so that it may be swung to one side with the plug, after the latter is withdrawn from the breech onto the tray. As shown, the tray is supported by an arm s, extending from a sleeve t, pivoted to the bracket D, as for instance, through the medium of a vertical shaft E², passing through bearings in the bracket D, and rotated through the medium of a worm wheel E' on the shaft, and a worm H upon a shaft H' turning in bearings on a bracket H³ bolted to the breech; the said shaft H' being revolved by any suitable means. When revolved by hand, the shaft H' is provided with a crank arm H². Upon the tray C, are parallel ribs or rails c, c, adapted to longitudinal grooves b, b, in the plug, which grooves are in a position to coincide with the rails when the plug is turned to position to disengage its threads from those of the breech, ready for removal, and the said grooves b, b, are of such length that the ends of the grooves will abut against the ends of the rails when the plug is withdrawn to its full extent.

In order that the swinging tray C may be held fixedly in place to receive the plug, I provide it with a locking device of any suitable character, that will lock the tray in position against the breech, and in order that the plug may be expeditiously swung out of position opposite the breech when it is fully upon the tray, I provide means whereby when the plug reaches this position, the said locking device will be released. Different forms of locking devices arranged to effect these results may be employed. As shown, there is pivoted to the tray a lever of the first order C', having at one end a hook c², which when the tray is in position against the breech, engages a hook a'

upon the breech and locks the tray to the breech, a spring c^6 tending to hold the parts in this position, while the projecting end or handle c^7 of the lever permits the latter to be manipulated by hand. A lug c^8 , with the inner corner beveled, extends upward from near the outer end of the lever C' into position to be struck and depressed by the plug B, as it arrives at its outer position upon the tray, so that the lever C' is thereby tilted to disengage its locking end. Upon the lever C' is another lug c^8 , which normally is below the upper face of the tray, but which when the plug is fully out and the outer end of the lever C' is depressed, is brought opposite a shoulder, not shown, on the plug and holds the latter in position upon the tray, preventing it from sliding forward when the parts are swung back into place to insert the plug.

In order to lock the lever C' , with its inner end in an elevated position to hold the plug with certainty in place, I make use of a
37 second locking device of a suitable character. For instance, a cross-bolt c^4 , sliding in a slot x' , extending transversely through the lever C' , extends beyond one side of the lever in position to engage a shoulder c^5 on a projection of the tray, when the inner end of the lever C' is elevated.

In order to automatically remove the bolt from the shoulder c^5 , when the tray is swung inward, I provide the bolt with a rod c^{10} , extending forward and projecting beyond the end of the lever, so as to make contact with the breech of the gun when the tray reaches its inner position, thereby forcing back the bolt and permitting the end of the lever to drop. A spring c^{12} normally throws the bolt inward. Any other suitable lock for locking the lever C' may be substituted for that shown.

In order to remove the plug from the breech of the gun in the present construction, the plug has to be first turned or partially rotated in the breech to release the interlocking mutilated screw-threads and then withdrawn longitudinally from the breech, and my invention is directed more particularly to the means whereby these operations are accomplished, and I make use of what I term a compound operating wheel, which is arranged to engage suitable racks applied to or formed on the plug. The compound wheel is constructed so as to operate as a worm-wheel and as a spur gear or pinion, substantially as hereinafter described.

The plug is shown as provided with a segmental rack G, and with a longitudinal rack g^2 , by means of which the rotary and longitudinal movements of the plug may be accomplished, and the compound operating wheel is arranged to coöperate with both of these racks. The wheel may be made so that it can be turned one or more revolutions to the extent necessary to turn the plug as far as desired, acting in this respect solely as a worm wheel, and after the plug is turned to the necessary extent, the wheel will present spur or pinion teeth or faces of a proper character and arrangement to engage the teeth of the rack g^2 and draw out the plug; or the wheel may be of such a size that a portion of the teeth engage the rack G to turn the plug,

and another portion engage the rack g^2 to draw out the plug, depending upon the extent of rotation of the plug, and the pitch of the teeth of the wheel. To this end the compound wheel E has practically two sets of teeth. That is, it has projections which may be of any suitable character and arrangement, with inclined faces v , that engage the inclined faces of the corresponding inclined teeth v' of the rack G, and acting thereon as worm-threads to turn the plug in one direction or the other, and the projections on the wheel E have also vertical faces e which when the rack g^2 is brought into line with the wheel engage the vertical faces w of the teeth of the rack g^2 , acting as spur or pinion teeth. As shown in figs. 1 and 2, the worm faces of the wheel are formed by providing said wheel with inclined or broken spiral projections corresponding to sectional threads of a regular worm-wheel of proper character, the faces being of proper pitch to engage those of the teeth v' of the rack G, while the spur or pinion faces are formed by cutting vertically through the worm teeth, as shown, so that the upper and under sides of the projection on the periphery of the wheel E have a proper pitch and angle to act as worm threads and the vertical faces of the projections have the proper pitch and are properly spaced to constitute spur or pinion teeth

and engage the faces of the teeth of the rack g^2 . In order that
38 the pinion faces may engage the teeth of the rack g^2 at the proper moment I prefer to provide the rack G with a lug or stop g' , so arranged as to make contact with the top face of the wheel E, at the moment that one of the vertical or pinion faces of the wheel E is brought against the first of the vertical faces w of the rack g^2 , when the wheel E will then at once begin to act as a pinion to draw the rack and its plug longitudinally outward. If the periphery of the wheel E is greater than the length of the rack g^2 it is not necessary to subdivide the worm threads throughout the whole extent of the wheel.

While the construction and arrangement illustrated in figs. 1 and 2 are effective to the end desired, the teeth of the compound wheel E in some cases would be too much weakened in securing the vertical or pinion faces by subdividing the worm threads at close intervals, and I, therefore, for this purpose prefer the construction of wheel and rack illustrated in figs. 5, 6, 7, and 8, in which the worm thread sections f , f overlap each other, as shown, each having upper and lower faces of proper pitch, but each terminating in a vertical end face e , which acts as a spur or pinion face, and the teeth of the rack g^2 are subdivided instead of being continuous, each tooth having an inclined slot u across it adapted to receive a portion of one of the worm thread sections, so that the ends of said sections bear on the faces w of the said teeth, while the intermediate portions of the said sections will enter the slots u . By this means the teeth of the wheel E may be made of a size to secure all the strength necessary for effective operation under all circumstances.

Greater strength may be imparted to the teeth of the rack g^2 by forming only side notches instead of continuing the groove u entirely

across the tooth, leaving an intermediate web, as shown at u^3 , fig. 6, each of the worm thread sections being cut away to form a vertical recess u^4 (dotted lines, fig. 7) to receive the web u^3 , and this will not materially weaken the teeth of the wheel E.

It will be seen that the action in withdrawing the plug and also in inserting it is a continuous action, resulting from the revolution of the wheel E in each case continuously in one direction. Thus, when the plug is in place the revolution of the wheel E will first cause the teeth of the wheel to act as worm threads to turn the rack G and the plug until the stop g' is in contact with the face of the wheel, when the latter, continuing its movement, will act as a spur or pinion upon the rack g^2 to draw out the plug, and when the latter is fully out its contact with the lug c^3 will tilt the lever C' and unlock the tray from the breech, and the tray will then swing around, carrying the plug from opposite the breech, the lever C' being then locked in place by the bolt c^4 . When the movement of the wheel E is reversed the plug, being locked upon the tray, can not be moved thereon, and therefore the plug and tray will swing together until the tray is in contact with the breech, when the lock c^4 will be thrown back and the locking lever C' will engage the hook a' , releasing the plug, which can then slide inward upon the ribs c , c , under the pinion action of the wheel E, until the plug is fully in place, when the continued revolution of the wheel E will cause it to again act as a worm and turn the plug until it is seated in the breech.

It will be observed that while the plug is being withdrawn longitudinally there is no torsional strain or tendency to rotate the plug, and it slides freely upon the ribs of the tray.

39 In order to overcome the adhesion of the plug, which is apt to occur after firing, especially when a gas check is used as shown, and relieve the strain upon the teeth of the wheel E, I provide a projection or starting lug O, which is arranged preferably upon the side of the wheel E in such a position as to engage an extension or projection P of the curved rack G at the moment the plug reaches the proper position for the spur or pinion teeth to engage the rack to withdraw it from the breech. Thus it will be seen at this moment not only does the face of one or more of the teeth e impinge upon the face of the teeth w of the rack and exert a pressure tending to withdraw the plug longitudinally, but the tooth O also impinges upon the face of the extension P and operates to aid in starting the plug and overcoming its adhesion, so that the strain is divided between the teeth e and the prolonged tooth O. In this way I am enabled to exert the greater strain necessary in starting the plug without danger of injuring the teeth of the wheel, as the additional tooth O furnishes a greater wearing surface and takes a part of the strain at the moment of starting the plug.

I claim as my invention—

1. The combination with the breech and plug of a gun, of a curved rack and a straight rack upon the plug, and a compound operating wheel E provided with teeth having both worm faces engaging the

curved rack and spur or pinion faces engaging the straight rack, substantially as set forth.

2. The combination with the breech and plug of a gun, of a curved rack and a straight rack upon the plug, a compound wheel having teeth provided with worm faces adapted to the teeth of the curved rack, and spur or pinion faces adapted to the teeth of the straight rack, and a projection or stop upon the plug arranged to make contact with the face of the wheel when the plug is turned to bring the straight rack in position to engage the teeth of the wheel, substantially as set forth.

3. The combination with the breech and plug of a gun, of a swinging tray arranged to receive the plug, a curved rack and a straight rack upon the plug, and a compound wheel having teeth with faces adapted to engage the teeth of the curved rack, and other faces adapted to engage the teeth of the straight rack, substantially as set forth.

4. The combination with the removable plug of a gun, of a curved rack and a straight rack, and a compound operating wheel provided with worm teeth sections engaging said curved rack and arranged to overlap each other, the said sections having faces at the ends adapted to the faces of the teeth of the straight rack, substantially as set forth.

5. The combination with the breech and plug of a gun, of a curved rack and a straight rack, and a plug-operating wheel having worm teeth sections overlapping each other and with vertical end faces, the teeth of the straight rack having recesses adapted to receive portions of the said worm thread sections, substantially as set forth.

6. The combination with the breech and plug of a gun, of racks secured to the plug, a wheel having teeth engaging the racks, the wheel being provided with a starting lug arranged to engage a projection on the rack, substantially as described.

40 7. The combination with the breech and plug of a gun, of a curved and straight rack upon the plug, a compound wheel having worm and spur teeth to engage the respective racks and provided with a projection or prolonged tooth to engage a projection on the rack, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OWEN F. LEIBERT.

Witnesses:

JOHN F. MEIGS,

JAMES H. HAYDEN.

Following are the proceedings in the Patent Office upon which the foregoing patent to Leibert was granted:

December 8, 1893, the examiner wrote Leibert as follows:

"This case has been examined, and claims 1, 2, 3, 4, 5, and 7 may, as the office is now advised, be allowed when in claim 1, line 4, the words 'engaging the curved rack' are inserted after 'worm faces,' and

the words 'engaging the straight rack' are inserted after 'pinion faces' in same line; and if in claim 4, line 3, the words 'engaging said curved rack and' were inserted after 'sections'; and if in line 3, claim 7, 'respective' were inserted before 'racks.'

"Claim 6 is rejected as calling for nothing more than a tooth of a pinion engaging a tooth of a rack.

"The shoulder c on the tray must be more clearly shown."

December 28, 1893, Leibert's attorney wrote the Commissioner of Patents as follows:

"We amend this case by adding a new sheet of drawings, filed herewith, being fig. 10.

"We amend the specification, page 2, line 7, by inserting:

"Fig. 10 is a partial side view showing the breechblock withdrawn."

"Page 11 of the specification, line 4, for the words 'prolonged tooth' insert 'starting lug.'

"Claim 1, line 4, after 'worm face,' insert 'engaging the curved rack,' and same claim, same line, after 'pinion faces,' insert 'engaging the straight rack.'

"Claim 4, line 3, after the word 'section,' insert 'engaging said curved rack and.'

"Claim 6, line 2, after the word 'wheel,' insert 'having teeth,' and same claim, line 3, for the words 'having a projection' read 'being provided with a starting lug.'

"Claim 7, line 3, before 'racks,' insert 'respective.'

"This amendment will, we think, put the case in condition for allowance. The additional sheet of drawings more clearly shows the shoulder referred to in the official letter, as well as the racks arranged upon the breech plug, in position for operation. We call attention to the fact that this case is entitled to speedy action and trust that it will be allowed without delay."

January 13, 1894, the Commissioner of Patents wrote Leibert notifying him of the allowance of said patent.

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XIII.

The said letters patent to John W. Stockett, Nos. 601176 and 601177, referred to in Finding VI above, are as follows:

PATENT NO. 601176.

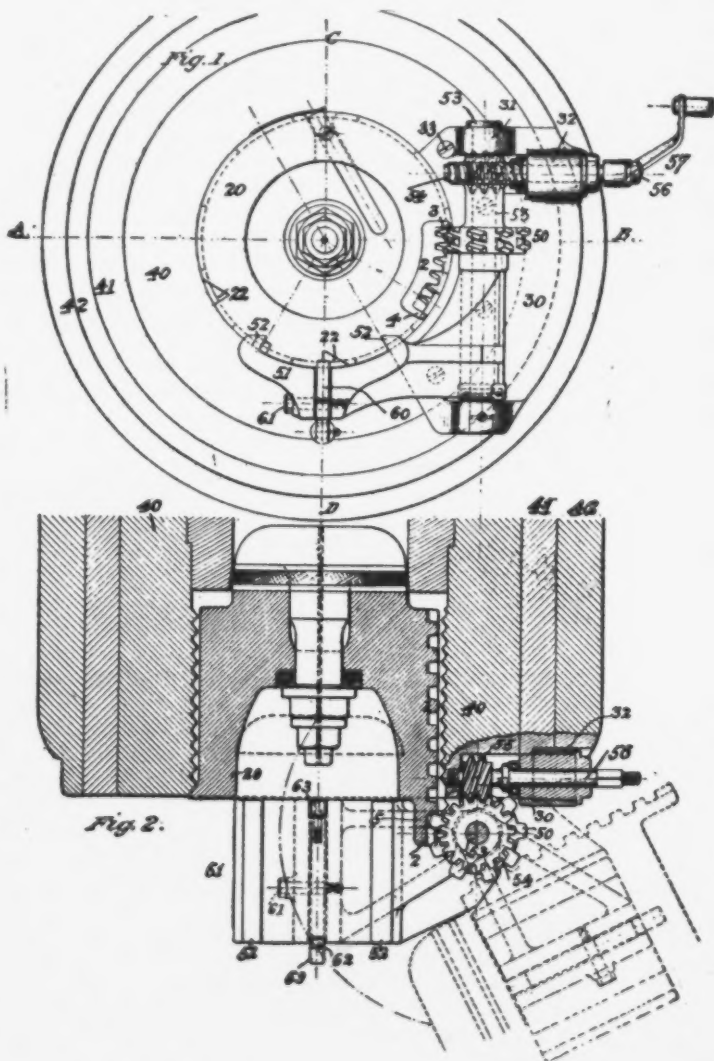


Fig. 3.

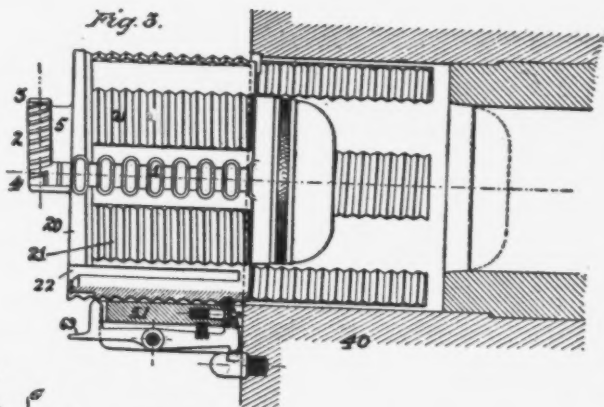


Fig. 4.

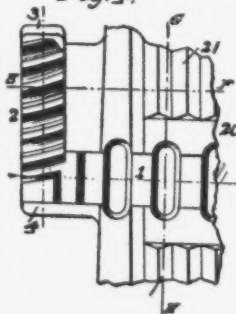


Fig. 5.

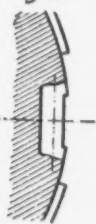


Fig. 6.

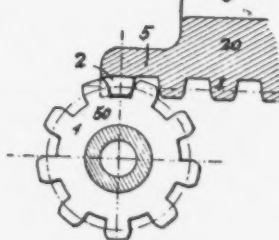


Fig. 7.

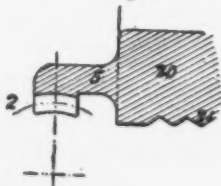
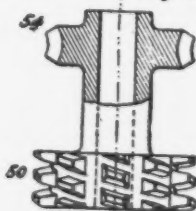
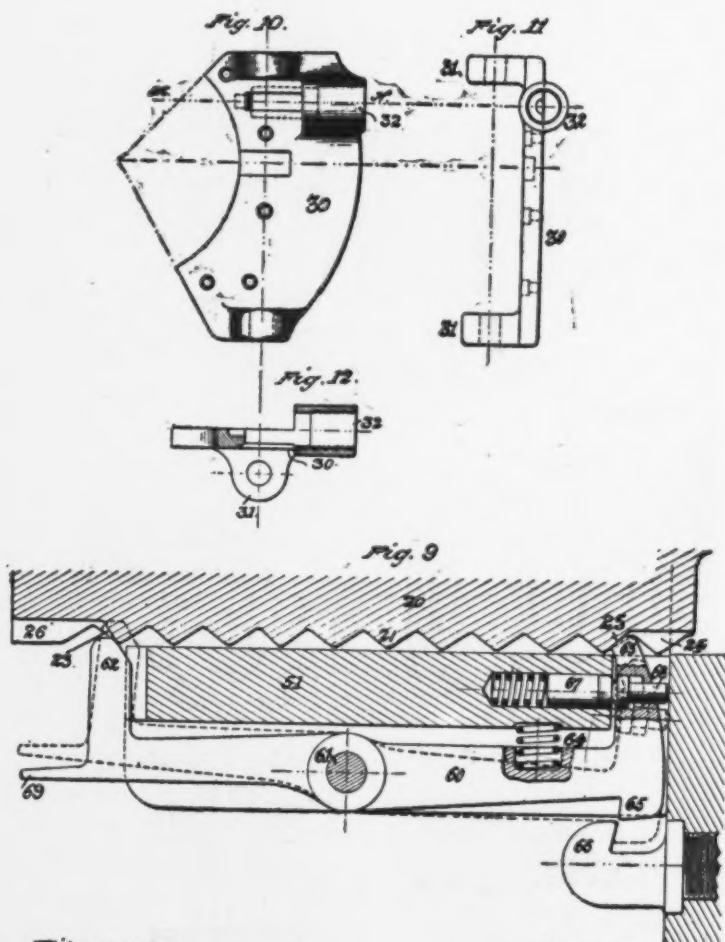


Fig. 8.





Witnesses:
B. C. Tiffan,
Edwin H. Lundy,

Inventor:
John H. Stockett
by O. B. Brock atty,

- 44 United States Patent Office—John W. Stockett, of Washington, District of Columbia—Ordnance breech mechanism.

Specification forming part of Letters Patent No. 601,176, dated March 22, 1898. Application filed August 4, 1897. Serial No. 647,083. (No model.)

To all whom it may concern:

Be it known that I, John W. Stockett, of Washington, in the District of Columbia, have invented a new and useful Ordnance Breech-Operating Mechanism; and I do declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the letters and figures marked on the accompanying drawings, which form a part of this specification.

My invention relates to firearms and ordnance.

The improvements will be understood from the following description; and they consist in the combination and construction of the hereinafter-described devices, the details of which will be first fully set forth and the patentable features pointed out in the claims.

Figure 1 is a rear elevation of a gun to which my improvements have been applied. Fig. 2 is a central longitudinal section through line A B of Fig. 1 with parts in elevation and in dotted lines. Fig. 3 is a central longitudinal section through line C D of Fig. 1 with parts in elevation. Fig. 4 is a detail side elevation of the plug. Fig. 5 is a detail section thereof. Fig. 6 is a detail section of the plug and elevation of the operating-pinion. Fig. 7 is a detail section of the plug. Fig. 8 is a detail elevation and partial section of the operating-pinion, shaft, and worm. Fig. 9 is an enlarged detail section of the plug, gun, and tray-latch. Fig. 10 is a plan of the breech-plate. Fig. 11 is an edge elevation of the same, and Fig. 12 is a section of the same through the line M N of Figs. 10 and 11.

The breech-plug 20 is provided with a longitudinally-disposed translating-rack 1 upon the periphery of the plug and a transversely-arranged segmental rotating rack 2, virtually joining the outer end of the rack 1 at an angle approaching nearly that of a right angle. The length of the rack 1 is substantially that of the plug and the segmental rack about thirty degrees of the circumference thereof. These relative dimensions are illustrative merely. As a preferred construction both the racks are formed integral with the plug, but of course they may be separate and rigidly secured thereto.

The rotating rack 2 upon the line of its length is parallel with the threads 21 on the plug 20 for a purpose hereinafter referred to, and it has a stop 3 at one end and a stop 4 at the other, where the two racks 1 and 2 join.

5 is a web between the plug and rack 2 for strength and rigidity.

The rack-teeth of the rotating segmental rack are cut with curved working faces concentric with the axis of the pinion or gear 50 and the axis of the hinge upon which the tray swings, for a purpose also to be explained.

30 is the breech-plate, which supports the tray and its operating mechanism, together with the plug, during its linear translation out of and into the breech of the gun. It has bearings 31, which support the tray-bearings and the plug in all its movements. It has also a horizontal bearing 32, which receives the crank-shaft and its actuating mechanism. The peculiarity of this breech-plate is such that it is supported entirely by the jacket 40 in a built-up gun, and it has no connection with the hoops 41 or 42, the purpose of which will be hereinafter set forth. The breech-plate is peculiar and novel in connection with built-up guns.

The tray 51 is of the usual construction and is provided with rails or ribs 52, upon which the plug 20 slides and rests when upon the tray. It carries also a latch or lock mechanism, which will be described farther on. The hinge-pin or shaft 53, upon which the tray 51 swings, is mounted in the bearings 31 of the breech-plate 30, and it carries a worm-wheel 54, which meshes with the worm 55 on the operating shaft 56, carried in suitable bearings in the jacket of the gun and the bearing 32 in the breech-plate. A crank 57 or other means serves to rotate the shaft.

The hinge-pin 53 carries the plug rotating and translating pinion 50. This pinion has worm or helical threads cut thereon, which threads are interrupted or mutilated by being cut away transversely at regular intervals, the sides of the cut-away portions forming a series of spur-teeth. The helical threads mesh with the rotating segmental rack 2, while the spur-teeth engage the longitudinal straight rack 1.

The plug 20 has grooves 22, adapted to fit upon the rails 52 of the tray, and it may be provided with a gas-check and other suitable appurtenances. The threads 21 on the plug are interrupted in the usual way and are adapted to register and lock and unlock with threads on the gun-breech.

I provide an automatically-operating latch for locking the tray to the breech in the act of translating the plug and also to lock the plug upon the tray when the latter is swung away from the gun-breech and when the plug is fully withdrawn from the breech. This latch consists of a lever 60, pivoted in the tray at 61 within a recess in the under side of the tray.

62 is a bevel-jaw on the rear end of the latch-lever, and 63 is a bevel-jaw on the forward end of the latch, both jaws or projections being adapted to engage the plug under conditions which will be set forth.

64 is a spring normally depressing the front end of the latch-lever.

65 is a catch on the lower front end of the lever, and 66 a hook with which the catch engages when the front end of the latch is depressed.

67 is a spring-operated bolt located in a recess in the front end of the tray. Registering with this bolt when the inner end of the latch-lever is up and the plug fully withdrawn is a bolt or tappet 68, which has a limited longitudinal play in a hole and socket in the inner end of the latch-lever. The tappet 68 has, preferably, an enlarged rounded head, against which the bolt 67 bears.

When the catch 65 and hook 66 are in engagement, the head of tappet 68 still prevents the forward motion of bolt 67, as is shown by dotted lines in Fig. 9, as is also the case when the latch is in the position shown in full lines in the same figure. When, however, the tray 51 is swung away from the gun-breech upon the latch being released from the hook 66 by the movement of the plug upon the tray, (or upon being operated by hand by the handle 69,) then the inner end of tappet 68, no longer being forced outward by its contact with the gun-breech, is forced inwardly by the spring-bolt 67 and the bolt enters the tappet-socket in the latch, locking the latter securely in the position shown in full lines in Figs. 3 and 9. This last-named locking position of the latch will be maintained at all times when the tray is not in contact with the breech, nor can the handle 69 be operated in such position. When, however, the tray is swung back against the breech, the tappet 68 impinges thereon, and its contact with the wall of said breech shoves the tappet outwardly and ejects the bolt 67, whereupon the inward movement of the plug and the action of spring 64 causes the catch 65 to engage the hook 66 and lock the tray to the breech.

The plug 20 has a longitudinal slot or groove 26 open at the outer end and terminating in a bevel-face 23 at its inner end. A similar slot 24 is cut at the inner or opposite end of the plug, having also a bevel-face 25. The width of these slots 26 and 24 corresponds with and is slightly larger than the width of the latch-jaws 62 and 63.

Fig. 9 shows the plug at the full outward movement upon the tray locked thereon and the tray released from the breech. In such position the tray is ready to swing away from the breech or the plug pushed into the breech and the latch locked to the breech. In the latter movement of the plug upon the tray into the breech the bevel-face 23 of the slot 26 is moved inwardly away from its contact with the rear latch-jaw 62, permitting the latter to rise within the slot 26, and the spring 64 depresses the catch 65 into contact with the hook 66, the front jaw 63 dropping at the same time below the path of the plug.

The outward translation of the plug upon the tray takes place when the latch-lever is in the position shown by dotted lines, Fig. 9. No movement of the latch results until the bevel 23 of slot 26 engages the bevel-jaw 62 of the latch-lever, when the inner end thereof is thrown upwardly, tripping or releasing catch 65 and causing jaw 63 to enter and engage the bevel-face 25 of slot 24. This only occurs at the full outward movement of the plug upon the tray sufficient to swing it clear of the breech.

The relation of the rear jaw 62 and the front jaw 63 is such that the plug can never ride over the rear jaw, the engagement of the front jaw 63 with the plug preventing the depression of the rear jaw to such an extent as to prevent any movement of the plug. The movement of the plug upon the tray in either direction when the tray is swung away from the breech is prevented by the spring-bolt 67, which has already been described, both jaws of the latch being in engagement with the plug.

It has been stated that the center line of the rotating rack 2 on the plug 20 is disposed parallel with the interrupted threads 21 on said plug. As a result of this construction a serious jamming of the teeth of the rack 2 against those of the pinion 50 is avoided. When the breech-plug is rotated to release its threads with those of the breech, it moves backward, due to the pitch of the threads, and similarly it moves forward when being locked in the breech. When the line of the rotating segmental rack is perpendicular and not parallel with the threads of the breech and plug, the working conditions of the teeth on the plug and those on the pinion vary. At the beginning of the unlocking movement in such a case there is only a working clearance between the teeth on the rack and those on the
47 pinion. As the plug moves backward during its rotation this working clearance is taken up and soon causes undue friction on the helical faces of the teeth and a harder working of the parts, necessitating the application of more power for translating the plug than is the case when my improved mechanism is used.

As has been described, the teeth of the rotating rack 2 are cut with curved faces, and these faces are concentric with the axis of the hinge 53 or pinion 50. A line-bearing is thus obtained between the teeth of the rack and pinion, which prevents a flat surface being worn on the helical faces of the teeth, which would be the result if the rack-teeth were cut straight.

It will be noticed that the fastenings of the breech-plate 30 (in this instance by bolts 33) to the gun-breech are confined wholly to the jacket 40 and that it is entirely disconnected from the hoops 41 and 42. This construction is an important one in built-up guns. These hoops move more or less upon each other and upon the jacket when the gun is in service, which firing causes the hoops to creep and momentarily release the internal strains in the metal, due to the method of manufacture. This independent movement of the hoops has actually caused a bending of both the hinge-pin and the pinion in service on guns in which these parts were in one way or another connected with the hoops. In my construction these hoops come and go without affecting in any degree the working of the breech mechanism, the mechanism being secured to the jacket 40 only.

As a result of my peculiar construction of rack 1 and pinion 50 two or more cog-faces of said pinion are brought to bear at all times upon the vertically cut teeth of the rack 1 when the plug is being withdrawn or replaced and there is no tendency of its being pushed to one side and jammed. In other words, there is an even pull upon each side of the linear line of motion of the plug. By distributing the pull on two or more pinion-teeth also the tendency to wear or bur the pinion-teeth is greatly diminished. In most of the ordnance breech mechanisms in use there is a danger of the plug being pushed to one side during its translation, due to the power being applied to one side of the center of motion of the plug.

Where the withdrawing and rotating racks are formed separately from the plug and secured thereto, there is great danger of their being broken or distorted, rendering the gun useless in action. I

have provided effectually against this danger by forming the plug and the racks of one piece of steel.

I claim—

1. In a gun, the combination of a threaded breech-block having a longitudinal rack thereon parallel with its axis and a segmental rack parallel with the screw-threads, with a worm-wheel having its threads interrupted transversely on a line parallel with the axis of the wheel, forming rack-teeth.

2. The combination of a plug, a tray and a locking-catch on the tray having jaws in locking engagement with cams on substantially opposite ends of the plug when the latter is fully withdrawn, substantially as described.

3. A breech-plug for guns having locking-threads upon its periphery and a rotating rack parallel with said locking-threads.

48 4. A breech-plug for guns having locking-threads upon its periphery, and a segmental tooth-rack upon its rear, the pitch-line of the segmental rack being parallel with the locking-threads.

5. The combination of a gun, a breech-plug having a segmental tooth-rack thereon, a pinion engaging the rack mounted upon the gun and means for operating the pinion, the working faces of the teeth of said rack and pinion being concentric with the axis of the hinge-pin.

6. The combination of a gun, a breech-plug, a breech-tray, a latch pivoted upon the tray and having a jaw at each end projecting upwardly through the tray into locking engagement with cam-surfaces substantially at the front and rear end of the plug, when the latter is fully withdrawn, substantially as described.

7. The combination in a built-up gun, a breech-plug therein, the ends of the sleeves of said gun, constituting the jacket and hoops, being substantially flush with each other, of a recess in said jacket and hoops, and a carrier-plate removably attached to said jacket and free from said hoops, the operating mechanism for said plug being supported on said plate and partially lying in said recess.

8. The combination of a gun, a breech-tray hinged thereto having a latch pivoted to the tray, said latch having a plurality of cammed projections and a lock for holding both cams in engagement with the breech-plug.

9. A threaded breech-plug for guns having a rotating rack formed integrally therewith and parallel with the locking-threads of the plug.

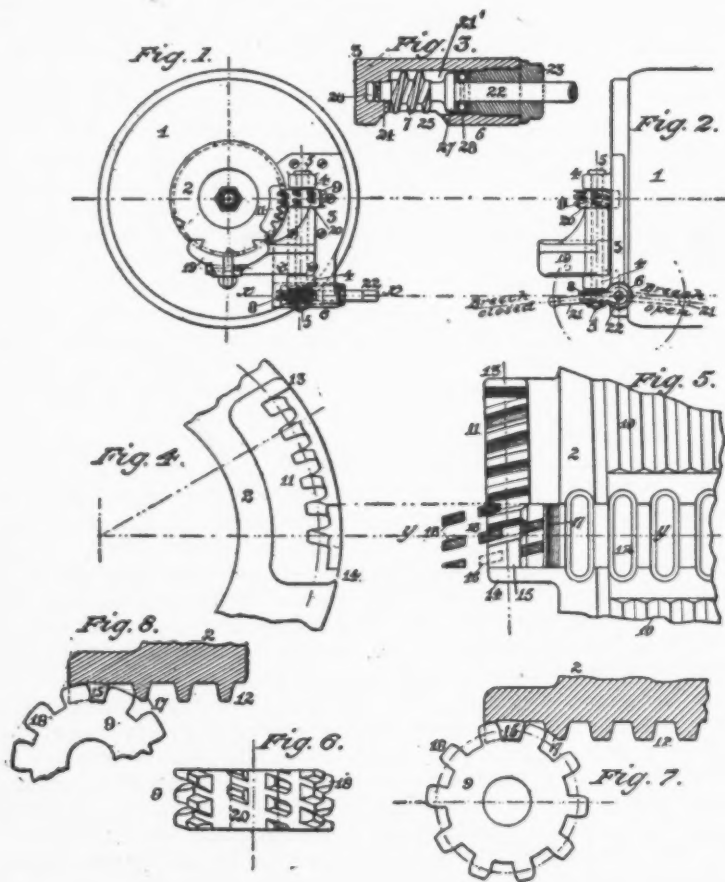
10. A threaded breech-plug for guns having a translating-rack and a rotating rack formed integrally therewith, the latter rack being parallel with the locking-threads on the plug.

In testimony whereof I affix my signature in the presence of two witnesses.

JNO. W. STOCKETT.

Witnesses:

EDWARD K. DE PUY,
R. G. SUTTON.



Witnesses:

Edwin H. Lindy.
B. G. Davis

Inventor:

John H. Stockett
By Daniel R. Brock
Att'y

50 United States Patent Office—John W. Stockett, of Washington, District of Columbia.—Ordnance breech mechanism.

Specification forming part of Letters Patent No. 601,177, dated March 22, 1898. Application filed November 6, 1897. Serial No. 657,677. (No model.)

To all whom it may concern:

Be it known that I, John W. Stockett, of Washington, in the District of Columbia, have invented a new and useful Breech-Operating Mechanism for Ordnance; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the figures marked on the accompanying drawings, which form a part of this specification.

My invention relates to breech-operating mechanism for ordnance. The improvements consist in the following construction and combination of parts, the details of which will first be fully set forth and the features of novelty then pointed out and claimed.

Figure 1 is a rear elevation of a gun to which my improvements have been applied. Fig. 2 is a side elevation of a portion of a gun-breech. Fig. 3 is an enlarged detail section through the line $x x$ of Fig. 1. Fig. 4 is an enlarged detail end elevation of the rotating rack. Fig. 5 is a similar side elevation of the compound rack and a portion of the plug, with the intermeshing gear-teeth thereof projected graphically or diagrammatically over the rack to more clearly illustrate its action. Fig. 6 is an edge view of the compound gear. Fig. 7 is a side view of the compound gear and a section of a portion of the plug. Fig. 8 is a view similar to Fig 7, showing a modified form of gear-teeth.

In the drawings, 1 represents the breech of a gun.

2 is the plug.

3 is a carrier let into a recess in the breech or jacket, upon which is mounted the plug-operating mechanism.

4 are bearings on the carrier-plate in which the hinge-pin or shaft 5 works.

6 are the bearings upon the lower end of the plate 3 within which the crank-shaft 22 works.

7 is a worm upon shaft 22, which meshes with a worm-gear 8 on the lower end of the hinge-pin 5.

9 is a compound worm and gear mounted on the upper end of the hinge-pin and fast thereon.

The worm-thread of the gear 9 is cut away or interrupted at regular intervals to form a series of spur-teeth, thus forming a compound gear.

The plug 2 is formed with the usual interrupted threads 10. I provide it also with a preferably integrally-formed segmental rotating rack 11 and a longitudinal translating-rack 12 upon the periphery of the plug.

13 and 14 are stops, respectively, at the outer and inner ends of the rack 11.

15 is a widened tooth or abutment at the inner end of the rack 11 at its juncture with rack 12.

One of the regular teeth on the side of the gear 9 is omitted at 20. It is more clearly shown in Fig. 6, and in Fig. 5 by dotted lines 16, showing where this tooth would be if not omitted.

51 Tooth 17 of the rack 12 is cut away in part to permit the free rotation of the teeth of gear 9.

The plug is shown locked in Fig. 1. When it is desired to unlock the plug, the gear 9 is rotated. The helical faces 18 of its teeth engage the rack 11, causing the plug to rotate until the threads 10 of the plug are unlocked. When the plug is fully unlocked and ready to be withdrawn from the breech, the rack 11 has been rotated to the point where the stop 14 engages the side of the gear 9. The engaging teeth of the gear are then in the position shown in Fig. 5. One of the gear-teeth has a full bearing against the widened or elongated tooth 15, and the space 20, where the omitted tooth of the gear would be if not removed, is indicated by the dotted lines 16. The elongated tooth 15 is thus permitted to enter that space in the rotation of the gear in both the opening and the closing of the breech. Now in the further rotation of the gear (the further rotation of the plug having been arrested by the stop 14) the spur-faces of the gear engage the tooth 15 and the teeth of the rack 12 and withdraw the plug upon the tray 19, where it is swung open upon the hinge-pin in the usual way. The initial linear withdrawal of the plug is also assisted by the impinging of the helical faces of the gear-teeth against the working faces of the rack-teeth 11.

The relation of the racks 11 and 12 with the gear 9 is such that the tooth or abutment 15 always comes into the space 20 during both the closing and opening movements of the plug.

It will be noticed that the crank-shaft 22 and crank 21 are disposed at the lower end of the hinge-pin and the gear 9 at the upper end. The gunner has the crank thus brought into a more advantageous position than where the crank was located at the upper end and can apply power thereto more effectively, especially in large guns.

By locating the crank at the lower end of the hinge-pin I am enabled to use any size of worm-wheel upon the hinge-pin and at the same time locate the compound gear at its proper position. Where the worm-wheel and crank are above the compound gear, there is not enough clearance for the use of a worm-wheel of sufficient diameter to easily operate large guns. If the hinge-pin be lengthened at its upper end to provide for the use of a large worm-wheel, the hinge-pin is correspondingly weakened and there is danger of its bending, especially in large guns, where the weight carried by the hinge-pin is very large. Besides, the gunner can not operate the crank to advantage in such position. I have also devised the breech mechanism so that the crank 21 will always stand in substan-

tial line with the length of the gun or slightly below said line when the breech is open and when the breech is closed.

If the crank stood, for example, at substantially right angles to the gun when the breech is closed, the recoil of the gun would cause an inertial rotary movement of the crank and a tendency at times to blow out the plug. This inertial movement is completely neutralized when the crank is in substantial line with the gun. In like manner when the breech is open any undue movement of the breech mechanism due to the crank standing transversely of the gun when it is being loaded is obviated.

In heavy ordnance the gun is elevated when being loaded and the breech correspondingly depressed. The tray when receiving the shell is swung away from the breech. In such position the heavy tray, due to the inclination of its hinge-pin, will close against
52 the breech unless locked in its open position. This closing tendency is greatly augmented, obviously, when the shell is placed upon the tray with its added weight. The weight and gravity of the operating-crank through the intervening mechanism, when standing substantially in line with the gun, neutralizes the tendency of the tray to close or to start to close when the shell is placed thereon.

The bearing 6 at the lower end of the carrier-plate 3 is formed as shown in enlarged Fig. 3.

21' is a bored chamber which receives the crank-shaft 22. It is closed at its open end by a threaded bushing 23, forming a bearing for the crank-shaft.

24 is the bearing at the inner end of the shaft. Bearing 6 is cut away at 25 to provide for the proper meshing of worm 7 with the worm-gear 8.

To provide for the easy operation of shaft 22, a thrust button-block 26, having a convex face, is seated in bearing 6 at the inner end of the shaft, the latter being provided with a similar face bearing thereon.

27 is a collar on shaft 22, and 28 is a ball-bearing device interposed between the bushing 23 and the collar 27. These constitute the endwise bearings of this shaft.

Fig. 8 shows a modified construction of the gear 9 and rack 12. The helical faces of the gear-teeth are elongated and the intervening spaces correspondingly shortened. The rack 12 is cut, as shown, to intermesh with these gear-teeth. Greater security against rupture of the gear-teeth during the engagement of the helical faces of these teeth results from this construction.

The segmental rotating rack 11 upon the line of its length is parallel with the threads upon the plug, so that when the plug is rotated in the breech the tendency of the teeth of the compound gear in the rotating rack to jam, due to the resulting slight linear movement of the plug, is avoided.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a breech mechanism, a compound gear having an interrupted helical thread and an interrupted series of spur-teeth, and having one of the compound helical and spur teeth cut away.

2. In a breech mechanism, a gear provided with a series of compound helical and spur teeth having one of the compound helical and spur teeth cut away.

3. In a breech mechanism, a gear provided with a series of compound helical and spur teeth having one of the compound helical and spur teeth cut away, combined with a plug having a rotating and a translating rack.

4. In a breech mechanism, a gear provided with a series of compound helical and spur teeth having one of the compound helical and spur teeth cut away, combined with a plug provided with a segmental rack having an elongated tooth adapted to enter said cut-away portion, and a longitudinal translating-rack.

5. The combination in a gun, of a breech-plug, gearing for actuating said plug, and means for holding said plug in an open position, said means comprising the crank for said gearing when longitudinally disposed, as set forth.

6. The combination in a gun, a hinge-pin and crank-shaft mounted upon said gun, a gear fast upon the upper end of the hinge-pin, a worm-wheel fast upon the lower end of the hinge-pin, a worm upon the crank-shaft engaging said worm-wheel, a tray mounted upon the hinge-pin, and means for holding said tray in an open position, said means comprising the crank for operating the gearing when longitudinally disposed, as set forth.

7. The combination of a gun, a plug, a hinge pin upon the gun, a gear upon the hinge pin engaging the plug, a worm wheel upon the hinge pin, a crank shaft upon the gun having a worm meshing with the worm wheel, and side and thrust bearings for the crank shaft comprising a thrust button at one end, a bushing at the other, and an intermediate collar and ball bearing.

8. A breech plug having a rotating rack and a translating rack joining each other at an angle, the outer end of the tooth of the latter rack nearest the angle being cut away, the said rotating rack being parallel to the locking threads on the breech plug.

9. A breech plug having a rotating rack and a translating rack joining each other at an angle, the outer end of the tooth of the latter rack nearest the angle being cut away and the tooth at the angle of the racks being enlarged or elongated, the said rotating rack being parallel to the locking threads on the breech plug.

10. A gear provided with a series of compound helical and spur teeth having one of the compound helical and spur teeth cut away, combined with a plug provided with a segmental rack having an elongated tooth adapted to enter said cut-away portion, and a longitudinal translating rack and a tooth of the longitudinal rack nearest its outer end cut away.

11. In a breech mechanism, a gear provided with a series of compound helical and spur teeth having one of the compound helical

and spur teeth cut away and the helical faces of the teeth being wider than the spaces between the spur faces of the teeth.

12. The combination of a gun, a plug having a longitudinal translating rack and a segmental rack parallel with the screw threads of the plug, and a gear mounted upon the gun having a series of compound helical and spur teeth having an open space at a point where one of said teeth would be formed, and means for operating said gear.

13. In a breech mechanism, a compound gear having an interrupted helical thread forming a lateral series of spur teeth, having one of the teeth of a lateral series cut away.

14. The combination in a gun, of a breech plug, gearing for actuating said plug, and means for holding said plug in an open and closed position, said means comprising the crank for said gearing when longitudinally disposed, as set forth.

15. In a gun, the combination of a breech plug having a rotating rack and a translating rack joining each other at an angle; and a hinge pin having a pinion adapted to engage said racks, the outer end of the tooth of the translating rack nearest the angle being cut concentric with the teeth of the pinion.

In testimony whereof I affix my signature in the presence of two witnesses.

JNO. W. STOCKETT.

Witnesses:

JNO. J. COOK,

EDWARD K. DE PUY.

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XIV.

The state of the art at the time of Leibert's application for his said patent No. 516,768 is exemplified by the following patents, which, by this reference thereto, are made a part of these findings of fact.

United States: Canet, No. 430,102, of June 10, 1890; Schneider, No. 464,678, of December 8, 1891; Welin, No. 497,695, of May 16, 1893; Fletcher, No. 499,531, of June 13, 1893; Canet, No. 430,102, of June 10, 1890; Canet, No. 502,172, of July 25, 1893; Canet, No. 539,974, of May 28, 1895; Fletcher, No. 541,042, of July 11, 1895; Birdsall, No. 403,455, of May 24, 1889; Coffin, No. 150,136, of April 28, 1874.

British: Farcot, No. 3,402, of 1887; Lorenz, No. 16,292, of 1887; Canet, No. 11,858, of 1897.

None of these patents discloses the combination with the breech and plug of a gun, of a curved rack and a straight rack upon the plug, and a compound operating wheel provided with teeth having both worm faces engaging the curved rack and spur or pinion faces engaging the straight rack, as called for by the Leibert patent.

XV.

The combination devices of claims 1, 2, and 3 of the said Leibert patent are found in the said "Model 1895" breech mechanism manufactured and used by the defendants as in Finding VI hereinbefore set forth.

XVI.

Upon the foregoing facts the court finds the following ultimate facts, so far as they are questions of fact:

First. That the breech mechanisms covered by claims 1, 2, and 3 of the said Leibert patent possessed patentable novelty, utility, and invention.

Second. That the said mechanisms were used by the defendants in, and as a part of, the said "Model 1895" breech mechanism adopted and used by the defendants' War Department.

Opinion.

BOOTH, *Judge*, delivered the opinion of the court.

The Bethlehem Steel Company, a corporation organized under the laws of the State of Pennsylvania, brings suit to recover royalties for the use of a patented invention by the defendants. The patent in suit was the creation of Mr. Owen F. Leibert, an employee of said company, and for which he was granted letters patent No. 516,768 on March 20, 1894, assigning the same to said company on March 27, 1894. At the time said letters patent were granted the Bethlehem Iron Company, which subsequently by proper transfer became the Bethlehem Steel Company, was engaged in the manufacture for the defendants of 100 guns of various sizes under a contract made in 1891. The Bethlehem Iron Company, recognizing the importance of Leibert's invention, immediately after his application for letters patent, communicated in writing with the Ordnance Department of the Government calling their attention to
55 Leibert's invention and requesting the department, through the Secretary of War, to urge the Commissioner of Patents to make said application special and thereby expedite its consideration. The Secretary of War preferred the request and it was granted. In February, 1894, the Bureau of Ordnance requested the Bethlehem Iron Company to furnish it full and complete information as to the Leibert invention, which was accordingly done, and thereafter, in June, 1894, the bureau asked special leave to use said invention for experimental purposes on a 12-inch gun the defendants were then manufacturing at their Watervliet Arsenal without the payment of compensation. In July following the iron company granted the request and the defendants prepared for said purpose full plans and drawings of the Leibert device. Almost four years elapsed between the preferring of the above request and a decision as to the form of breech mechanism to be used, in so far as this record discloses, the

time being consumed in experimentation with many patented devices. During this period Mr. John W. Stockett, the Ordnance Bureau's chief draftsman, designed a modified form of the Leibert mechanism, upon some of the features of which he secured letters patent, as shown in Findings VI and XIII, known in the department as "Model 1895." The Stockett "Model 1895" was finally used at the Watervliet Arsenal. Contemporaneous with this transaction was the manufacture by the Bethlehem Iron Company of the 100 guns before mentioned for the defendants under its contract of 1891 and the question of the type of breech mechanism to be used was becoming important. Without entering into detail it is now only important to say that on the last 15 guns manufactured under said contract, "Model 1895" was manufactured and used by the company and for said use compensation was paid by the company to Mr. Stockett. In August, 1901, the Bethlehem Iron Company became the Bethlehem Steel Company, and Congress on June 6, 1902, by special legislation, authorized the substitution of the steel company for the iron company in all contracts then in course of execution except the contract of 1891. On November 5, 1902, the plaintiff company, in a written communication to the Chief of Ordnance, called his specific attention to the fact that the patented invention then being used by the company was in fact the Leibert patent, and directed the attention of the defendants to a similar fact in connection with the manufacture by the department of certain other guns at other places. The letter concludes with a request for an opportunity to present this matter fully to the defendants. The chief of the bureau responded by saying that the claims of the Leibert patent were so much involved with other and similar devices that it was impossible for the bureau to decide the "legal aspect of the case," and concluded by requesting the company to institute suit to determine the question.

The plaintiff's cause of action is necessarily *ex contractu*. It is a jurisdictional issue and must be first disposed of. The defendants contend in the first instance that the recited facts make out a case sounding in tort and hence the petition must be dismissed. The line of distinction between the two contentions has been clearly determined by the Supreme Court in numerous cases. The difficulty is more in the application than the ascertainment of the rule. If

56 the facts bring the parties in such a relationship that the court can imply from their conduct and sayings an agreement to pay for the use of the invention, then the action is providently brought and may be sustained. From cases heretofore adjudicated upon similar principles it may be safely asserted that where the Government uses a patented invention "with the consent and express permission of the owner" and does not "repudiate the title of such owner," an implied contract to pay a reasonable compensation for such usage arises. As was said by Mr. Justice Brewer in *Berdan Fire Arms Co. v. United States*, 156 U. S., 552, 567: "While the findings are not specific and emphatic as to the assent of the Government to the terms of any contract, yet we think they are sufficient. There was

certainly no denial of the patentee's rights to the invention; no assertion on the part of the Government that the patent was wrongfully issued; no claim of right to use the invention regardless of the patent; no disregard of all claims of the patentee, and no use in spite of protest or remonstrance. Negatively, at least, the findings are clear."

Mr. Justice McKenna in *United States v. Société Anonyme, etc.*, 224 U. S., 320, in discussing the elements necessary for the derivation therefrom of an implied agreement in a case strikingly similar to the present one, uses this language: "But these elements do not have to appear by the express declarations of the parties. They may be collected from their conduct. The alternative of a contract is important to be kept in mind. The officers of the Government knew of the De Bange invention and were aware of its great importance, and the purpose to deliberately take property of another without the intention that he should be compensated—in other words to do plainly a wrongful act—can not be imputed to them without the most convincing proof. Such proof does not exist in the present case. On the contrary, the record shows that compensation was contemplated. There was doubt as to the extent of it because there was doubt as to how far the devices used were attributable to or belonged to De Bange or whether they constituted an infringement of his patent, and therefore there was hesitancy and doubt, not as to compensation, but as to the amount and extent of it."

The findings in this case seem to bring it clearly within the rule of an implied contract. A résumé of the entire transaction negatives any intention of the Government to infringe the plaintiff's patent. The Ordnance Bureau was searching for the most efficacious device known to the inventive world to apply to its guns as a substitute for the one in use, a device performing a function of inestimable value in guns of the character here involved. Not alone were experiments being conducted to ascertain the value of plaintiff's device but at least three other patented inventions conceived by strangers to this record were being carefully investigated. A real substantial competition was in progress and surely in the absence of most convincing proof we are not to presume the defendants intended to avail themselves of the highly technical information contained in the respective letters patent that they might thereby infringe one or all. On the contrary, the department itself was not constructing a device; it put forth absolutely no efforts to bring into being a segregated mechanism to which it claimed title. The department was dealing with patentees and patent rights consciously, openly, and fairly without a thought of denying payment to the lawful owner of the patent. The Ordnance Bureau, with its organized corps of skilled mechanics, constantly in contact with patent rights, instantly recognized

57 the conflict in the claims of the patents before them. There is no doubt as to the fact. The uncertainty, as clearly appears from the letter set forth in Finding X, was as to the legal rights of the patentees under their letters, and this they felt unable to pass

upon. The plaintiff submitted its patent to the defendants, and defendants recognized its title by requesting a single use without the payment of compensation. Of course they knew they had no right to use it without pay, and had no intention to do so. Subsequently they did use a patented mechanism (true it is now claimed as the patent of another), but the defendants all through the course of this controversy were alone in doubt as to the rightful owner of the device to whom they should make payment. The letter of the chief of the bureau, dated December 23, 1895, is especially convincing of this fact. Brig. Gen. Flagler, then chief of the bureau, unequivocally attests the attitude of the department. The plans then being submitted to the arsenal show a device with respect to which he says: "It is a modification of the Liebert design." This, it seems to us, discloses in express language a recognition of plaintiff's title to the invention as well as an apparent conflict in patent claims between the inventors, and forcibly negatives the possibility of an inference that the prospective use of the mechanical device contemplated a trespass upon the inventor's property. The chief of the bureau knew the Ordnance Department had no invention of its own; that they were in the end going to use the property of another; that Liebert had not furnished his device for extensive use without the hope of compensation, and it is a rational inference from his conduct that he expected to pay the lawful owner of the patent when all conflicts were adjudicated. All the facts in the case and logical inferences therefrom furnish the degree of mutuality necessary for the implication of a contract.

What, then, did Liebert invent? For many years inventors applied their genius in an endeavor to create a mechanical device that would remove the breech plug from the breechlock of a gun in such a way as to secure certainty, speed, and accuracy. It was a task of magnitude and great importance. The mechanism, if operative and valuable, must condense in compact and rather simple form mechanical elements capable of functioning in three distinct ways. The breechlock and plug of all Army guns is the interrupted screw system, combined with the mushroom pin and De Bange gas check. In order to remove the plug it first requires a rotary motion to disengage it from the interrupted screw threads and likewise overcome whatever adhesion may possibly obtain by reason of the tremendous pressure on the gas check. Secondly, a longitudinal motion to withdraw the breech plug from the breechblock, and lastly, a swinging motion to remove the plug after withdrawal to a position incapable of retarding the quick reloading of the gun. Obviously the reverse of these movements is as indispensable as the initial process.

Running through the long list of patents furnished the court as exhibiting the prior state of the art is the fundamental idea that to accomplish the purpose intended necessarily involved the employment of a wheel with teeth projections thereon, a crank or lever to turn the same, separate racks attached, respectively, to the breech and block of the gun to engage the teeth upon the wheel, and a swing-

ing tray to receive the plug and convey it away from the open breech-block.

58 It is apropos at this point to observe that all these separate elements were old in the art. David N. B. Coffin, on April 28, 1874, secured Letters Patent No. 150,136 covering a mechanism for "imparting motion to machinery," which clearly anticipated the possibility of a combination of the elements mentioned, to perform somewhat similar functions to those above set forth. Coffin's wheel was not intended, and, in fact, could not be adapted to breech-loading ordnance, but the original idea was there. While Coffin's wheel did not function to first give the rotary and subsequently the longitudinal movement of bodily translation indispensable in the particular art now in issue, it nevertheless constituted a conception of the possibilities of a combination of elements possessing the functioning powers subsequently combined in various forms by inventors in breech-mechanism art. The distinction between Coffin's device and those that followed was the failure of Coffin to grasp the idea "in the combination shown of imparting two different successive movements to the same element." Coffin, from his specifications and claims, did not meet the emergency shown in the single compound gear wheel of the Leibert patent; he does not seem to have conceived the importance of the application of direct power to the compound wheel itself, to accomplish the rotary and longitudinal movements, but clearly had in mind the construction of a single wheel which, in combination with others, would directly impart power to the latter by the movement of the former—what may be said to be a conception of the translation of power by the forced movement of one wheel to other wheels in combination therewith, irrespective of the central idea of a rotary or longitudinal movement.

Seventeen years after the Coffin patent Henri Sneider, a citizen of the French Republic, obtained Letters Patent No. 464,678 for a mechanical device designed for breech-loading ordnance. The inventor recognized the indispensable functioning principles of the elements to be employed. Sneider's wheel is not technically a compound operating wheel. The essential power necessary to produce the dual movements in order to rotate and remove the plug from the breechblock of the gun is supplied by Sneider by the introduction of a worm wheel at the base of a perpendicular shaft upon which he places two separate sets of spur teeth, which in turn engage the racks on the breech plug. Sneider did not conceive the possibility of a single gear wheel with a single tooth projection performing exactly the same function he requires two separate teeth projections to do. In other words, Sneider employs two elements wherein Leibert uses but one.

In June of 1893 Frank F. Fletcher was granted Letters Patent No. 499,531 for certain new and useful improvements in breech mechanism for breech-loading guns. The Fletcher device was a combination patent and brought together in a simplified form the elements theretofore used by prior inventors and old in the art. Fletcher's

wheel (and the wheel is in fact the vital factor of all devices) is obviously distinct from Leibert's. It nowhere discloses a conception of combining in a single mechanism, i. e., a single wheel, the dual functioning capacity obtained by Leibert in the use of one set of tooth projections operating to perform the same service for which Fletcher uses in fact two wheels arranged one above the other, each bearing tooth projections possessing no unusual or novel mechanical qualities. Fletcher's device was indeed a substantial advance in the art but not sufficient to anticipate the Leibert mechanism, the salient feature of which we believe will hereafter appear.

The two Canet patents, viz, No. 502172, granted July 25, 1893, and No. 539974, granted May 28, 1895, exhibit a breech mechanism wherein the inventive faculty of the mechanic approaches very near the line of novelty, utility, and operativeness in this particular art. They disclose with marked precision the difficulties to be confronted and may, we think, be justly characterized as marking out an apparent path to final success. In fact, it appears in the record that the Canet device of 1895 is in use in guns of small caliber and has proven its worth. In army guns of large caliber its use has proven inoperative for it has been superseded by the very mechanisms involved herein. Canet had clearly in mind the utility and effectiveness of a compound operating wheel and designed one; he, too, missed the idea of a single set of tooth projections on a compound wheel functioning in a simple and powerful manner to produce the necessary motions; he required two distinct sets of teeth adapted to his wheel in "tandem fashion" to thus operate. Canet in both his patents found his tooth projections struggling against "torsion strain" particularly noticeable in No. 502172. The moment the rotary motion became checked the device upon the application of the translatory movement failed to respond to effectually stop the former movements, thus working interference and damage to the interrupted screws on both the breech plug and block. The direct power indispensable to an effectual stoppage of the rotary motion prior to the application of like force to remove the plug from the breech was not obtainable in the Canet devices by the projection upon a wheel of a single set of worm teeth followed in succession by a distinct set of spur teeth. The idea of combining on a single tooth projection the dual function obtained by Leibert escaped Canet (it may be said to have barely escaped him), but an examination of his specifications and claims obviously discloses its absence, and leaves his devices to stand upon the old notion that to accomplish the intended purpose two separate and distinct sets of teeth projections must be employed upon the revolving wheel.

We have perhaps gone into a discussion of the prior art more extensively than the case warrants. There remains, as set forth in the findings, several other patented devices in each of which there unmistakably appears the employment in various ways of all the elements subsequently found in the Leibert device. The defendant's vigorous

insistence upon anticipation and for an extremely narrow construction of Leibert's claims necessarily entailed a most careful investigation of this phase of the case and this fact, supplemented by the very nature and character of the novelty and utility of the Leibert invention, in view of the prior art, seemed to make the foregoing observations indispensable.

Leibert's Letters Patent No. 516,768 were granted March 20, 1894. The specifications considered in connection with the claims set forth the conception of a combination device new in this art, of practical utility and operativeness. For more than 20 years noted inventors, men skilled in the use of ordnance, had been striving sedulously to accomplish the identical thing Leibert accomplished. Leibert created a compound operating wheel provided with teeth having both worm faces and spur faces. The inventor brought into being for the first time a simple, effective compound operating wheel so constructed that the tooth projections thereon functioned to effectuate the identical purpose so long striven for. Leibert fashioned each single tooth in such way that in combination with the rack teeth on the breech-block, he obtained the power necessary to rotate the plug and disengage it from the interrupted screw threads, and by a continuous revolution of the wheel compel the same tooth projections to remove the breech plug from the breechblock. This is the extent of the novelty of Leibert's patent and was all accomplished by the combination of elements old in the art. It was the conception of a new and novel form of compound operating wheel and despite its simplicity seems to us to involve real invention. It must be conceded in the face of the record that the vital, predominant element of the Leibert device rests in the unique compound operating wheel; it is the one feature upon which the efficacy of the device depends, and this wheel provided with the single set of teeth adapted to be used as worm and spur teeth is the distinct mechanism which rotates the breech plug and removes it from the block. All other features of the device were old in the art. The swinging tray, in fact, the essential detail construction employed to attach the device to the breechblock, had been used from the beginning and no claim is made for them. The advantages of the Leibert device are at once apparent; his new wheel brought forth a simple, and what is just as important, a *compact* mechanism small enough in size to be employed without undue interference with the proper use of the gun and avoiding the "torsion strain" noted in the expert testimony as the condemning feature of the prior patents.

The Liebert patent is assailed by the defendants from practically every angle of the patent law. It is challenged for want of novelty, operativeness, and utility, and the court is asked, in the event of failure to sustain the objections going to the validity of the patent, to strictly construe the claims of the patentee and limit the device to the exact one described.

That patent rights may be lawfully predicated upon the combination of elements old in the art is, of course, conceded; the cases are

too familiar to require citation. If difficulty is to be found in the application of the law it seems to certainly exist in the ascertainment of just what is new in the claimed combination. The elements of the combination being old and their usual purpose well known, the inventor must inevitably be put to the necessity of utilizing them in a new and novel fashion to produce a certain result. Leibert and every other inventor engaged in this particular art knew professionally the functioning power of worm teeth and spur teeth. Leibert's predecessors were struggling, as he himself was struggling, to erect a device wherein or whereon he could unify these two well-known mechanical factors and make a single mechanical unit perform a double mechanical function; not, indeed, a new function, but a new machine, a new device, a new compound wheel, made up of old and well-known elements in the art and functioning in a novel way.

No assertion can possibly be sustained that the Leibert compound operating wheel as described in the specifications and claims of the patent in combination as shown is not a new and novel device.

61 The prior art discloses no similar one as adapted to and used in combination with breech-loading ordnance, and despite the astute technical distinctions and descriptions found in the conflicting expert testimony in the record, the physical obvious fact, apparent and indisputable from an examination of the numerous patents in the record, show no device similar in identity or operating in the same manner as the Leibert wheel. The Patent Office granted the letters and the burden of establishing their invalidity rests with the defendants.

In the case of *Potts v. Creager*, 155 U. S., 597, Mr. Justice Brown said: "It may be laid down as a general rule, though perhaps not an invariable one, that if a new combination and arrangement of known elements produce a new and beneficial result never obtained before, it is evidence of invention." A long line of cases sustain without interruption the principle announced in the *Potts v. Creager* case, *supra*. The Leibert device as adapted to breech-loading ordnance superseded all forms of mechanism theretofore employed to produce the intended effect. Its identity stands forth as emphatically as mechanical comparison can demonstrate. It was the conception of a device which no previous inventor had in mind and can not under the authorities be discredited because it brought together in simple and compact form a combination of elements, each of which had been theretofore used in a vain attempt to perform the exact functions Leibert's compound operating wheel performed. That it involved more than mechanical skill to evolve the device is pertinently emphasized by the fact that such an arrangement had never suggested itself to numerous inventors assiduously engaged in this very art for a period of time bordering on a quarter of a century. (*Loom Co. v. Higgins*, 105 U. S., 580.) In *Whipple v. Middlesex Co.* (*Fish. Pat. Cas.*) the court said:

"If by examination of the specifications, and applying to it the then state of the art, we can learn what the invention was, then the

claim, which was designed to be a condensed summary of the invention, is to be construed so as to be coextensive with the invention, if that can be done without doing violence to the language."

The specifications and claims of the Leibert patent are necessarily technical and minute. The patentee was endeavoring to cover all available phases of his invention and at the same time fully disclose its construction to those skilled in this particular art. What Leibert invented and what he claimed as invention was the compound operating wheel having both worm and spur-tooth projections thereon, each tooth being so constructed as to operate as a worm and a spur tooth to be used in combination as set forth. The starting and stopping lug were, it is true, essential details of construction but not new in the art, except as used by the inventor in his novel combination. The real invention abstracted from his specifications and claims is the new and novel form of compound operating wheel, a device claimed with, as before observed, much particularity, and detailed so plainly that it is difficult to find a single trace of obscurity. Why, then, should the inventor be limited, without deviation, to the precise form of the device he specifies and claims? First it is said he specifically designated his device by the reference letter "E." This fact standing alone is insufficient to sustain the contention; the state of the prior art is the real determining factor, and from it deductions follow as to the scope of the patent. In Hopkins on
62 Patents, Volume I, page 199, an exhaustive citation of authorities discloses the rule in this respect. In Campbell v. Marden,
64 Fed., 782, 785, the court said:

"Inasmuch as the claim is not limited by the prior state of the art, I do not think it should be limited by the fact of references by letters to the specific mechanism shown in the patent. * * * A limitation is not to be inferred from any words in the patent in cases where, from a consideration of the whole patent, taken in connection with the state of the art, the actual invention appears to transcend such limitation." Again, on page 200, Judge Archbald is quoted:

"But the use of the reference letter in this way does not necessarily limit the inventor to the exact form or configuration of parts which is thus portrayed and described, without regard to possible equivalents thereto. It may or may not, according to circumstances, as the authorities abundantly show. * * * It is after all a matter of construction, in which, while a reference by letters to the drawings and specifications may be regarded, as a rule, as involving a greater particularity of description, than without, the real scope of the invention is nevertheless to be considered and given due weight. No doubt there are cases where, by reason of the limitations imposed by the prior art, it is necessary in order to distinguish and save the invention to confine it to a certain form or arrangement of parts, which the use of reference letters may effectively serve to do. But where no such necessity exists, a patent is to be taken as a whole and effect given to the invention as it is there disclosed and claimed, in which the reference to the drawings merely goes in with

the rest." *Kelsey Heating Co. v. Spear Stove & H. Co.*, 155 Fed., 976, 980; *Keystone Mfg. Co. v. Adams*, 151 U. S., 139.

Leibert sets forth his patent in seven claims. In no one of the claims, aside from the first, is the device indicated by letters or numerals, and they are sufficiently comprehensive to embrace the invention, especially claim two. Taking the claims in conjunction with the specifications it would be difficult indeed to say that the patentee recognized or intended a strict limitation to his invention by the employment of the letter "E" in claim one. As indicative of this fact we find upon a critical examination of wheel "E," as it appears in the drawings and in claim one, that the worm and spur teeth projected thereon are not subdivided entirely around the periphery of the same, thereby giving rise to a contention that the device itself is anticipated by Canet, and if it were so limited much force would attach to the argument; but the specifications effectually remove all doubt as to what the inventor intended by this especial designation. They state: "If the periphery of the wheel 'E' is greater than the length of the rack g^2 it is not necessary to subdivide the worm threads throughout the whole extent of the wheel." In specifying the above the inventor obviously disclosed a simple detail of construction; surely he did not intend by so doing to obscure the real, primary element of his device and minimize an invention by a voluntary specification of the simplest mode of construction and manufacture. Is it a fair inference to indulge, from such a state of facts, that an inventor working, as the defendants aptly say, "in an already crowded art," intended to limit the novelty of his invention because in his claim he refers to a specific drawing which in fact exhibits the real functioning element of the mechanism but omits its completeness, an omission fully explained in his specification? The state of the prior art warrants no implication that Leibert's claims must be narrow and limited; on the contrary there is every reason from an examination of the letters patent to extend the inventor the benefit of the patent laws where it is apparent he has brought into being a new and novel device. *Societe Anonyme, etc., v. United States*, 224 U. S., 309. The distinctions between Leibert's compound operating wheel and those which preceded it are so manifest that the untrained eye of the layman may easily detect them. The preceding inventors failed to conceive the real vital features of the Leibert wheel; every single device they brought forth or attempted to put in operation clearly missed the wonderfully simple but central idea of Leibert, and that was the construction of a compound operating wheel with such tooth projections thereon that each single tooth arranged as specified would function both as a worm and as spur tooth. This record discloses no device which approaches it in novelty and usefulness. There was no apparent reason why Leibert should limit his claims, and we think they are coextensive with the invention and entitled to be so construed.

The defendants used the Stockett design under substantially the same circumstances enumerated in the Societe Anonyme case, supra. Stockett doubtless improved the Leibert patent, but even to the unskilled it is indisputably apparent that the invention of Liebert covered by his letters patent was the real functioning element of the Stockett mechanism. If you abstract from the Stockett device the Liebert tooth projections, having each a worm and spur face placed on the circumference of the compound gear wheel described in the Stockett specifications and claims, the device would be absolutely impotent and valueless to perform the indispensable movements for which it was intended. Stockett modified the Leibert patent by both transfer and omission of certain detail elements, but retained the identity of the Leibert mechanism and utilized it to furnish the vital element concededly indispensable to perform the three movements for which all inventors had been striving in this identical art. The history of the Stockett patent in the Patent Office shows beyond contradiction that he was instantly confronted with the Leibert patents and a contest of considerable extent ensued. The case in this respect is identical with the Societe Anonyme, etc., case, supra.

The case must be remanded to the general docket for proof as to royalties. The record furnishes no proof as to a reasonable compensation for the use of the invention. The proof and briefs must be filed herein on or before October 7, 1918, the case then to go on the November calendar. It is so ordered.

Hay, judge, Downey, judge, and Barney, judge, concur.

64 XIX. *History of proceedings after filing of court's findings and opinion.*

On June 11, 1918, the defendant filed a motion for additional finding of fact.

On January 20, 1919, on motion made therefor, and allowed by the court, Robert C. Hayden was substituted as attorney of record on the suggestion of the death of Joseph K. McCammon and James H. Hayden, former attorneys, without prejudice to any lien or interest of the former attorneys.

X. *Amendment to the amended petition.*

(Filed by leave of court July 23, 1920, nunc pro tunc as of April 27, 1920.)

Now comes the claimant pursuant to leave of court and amends its amended petition herein as follows:

1. Strike out paragraph XXII (pp. 15-16) and in lieu thereof insert the following:

"Between March 5, 1898, and March 20, 1911, the United States did manufacture and use large numbers of guns, to wit, one hundred and thirty-four guns, other than those manufactured for and deliv-

ered to it by the said Bethlehem Iron Company or by the claimant, which were and are provided with breech mechanisms containing the said patented invention and there is now due and owing from the United States to the claimant for and on account of the manufacture and use by the United States during the said period, of breech mechanisms embodying the invention described in said letters patent, royalty at the rate of \$500 for each one of the said breech mechanisms, amounting, in all, to the sum of \$67,000."

65 2. Paragraph XXIII (p. 16) in line four and again in line thirteen strike out the words "sixty-five," and in lieu thereof insert the words "sixty-seven."

BETHLEHEM STEEL COMPANY,
By ROBERT C. HAYDEN,

Attorney.

DISTRICT OF COLUMBIA, ss:

Robert C. Hayden, being duly sworn, deposes and says that he is the attorney for the Bethlehem Steel Company, the claimant named in and which subscribed the foregoing amendment to the amended petition; that he has read the same; and that the facts therein stated are true to the best of his information and belief. s

ROBERT C. HAYDEN.

Subscribed and sworn to before me this twenty-third day of July, 1920.

[SEAL.]

F. A. COLFORD,
Notary Public, D. C.

XI. *Argument and submission of case on question of damages.*

On April 27, 1920, this case was argued and submitted on the question of damages by Mr. Clarence P. Byrnes for the plaintiff and by Mr. Melville D. Church for the defendants.

66

XII. *Judgment of the court.*

At a Court of Claims held in the city of Washington on the third day of May, A. D. 1920, judgment was ordered to be entered as follows:

This case having been heard on the order of remand filed April 8, 1918, and the evidence and argument submitted in pursuance thereof and the motions by the plaintiff and by the defendants, respectively, for amendment of the findings heretofore made and filed, it is this day ordered by the court that the said motions to amend be, and they are severally, overruled; and it is further adjudged and ordered that the plaintiff have and recover from the defendants, the United States of America, the sum of sixty-seven thousand dollars (\$67,000).

BY THE COURT.

XIII. *Defendant's application for and allowance of an appeal.*

From the judgment rendered in the above-entitled cause on the 3rd day of May, 1920, in favor of claimant, the defendants, by their Attorney General, on the 6th day of July, 1920, make application for and give notice of an appeal to the Supreme Court of the United States.

FRANK DAVIS, JR.,
Assistant Attorney General.

Filed July 6, 1920.

Ordered: That the above appeal be allowed as prayed for.

EDWARD K. CAMPBELL,
Chief Justice.

JULY 26, 1920.

No. 28693.

BETHLEHEM STEEL COMPANY VS. THE UNITED STATES.

I, F. C. Kleinschmidt, assistant clerk Court of Claims, certify that the foregoing are true transcripts of the pleadings in the above-entitled cause; of the opinion of the court on demurrer by Peelle, Ch. J.; of the findings of fact and opinion of the court by Booth, J.; of the final judgment of the court; and of the application of the defendant for and the allowance of an appeal to the Supreme Court of the United States.

In testimony whereof I have hereunto set my hand and affixed the seal of said court at Washington City this 27 day of July, A. D. 1920.

[SEAL.]

F. C. KLEINSCHMIDT,
Assistant Clerk Court of Claims.

(Indorsed:) File No. 27,854. Court of Claims. Term No. 497. The United States, appellant, vs. Bethlehem Steel Company. Filed August 20th, 1920. File No. 27,854.

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In the Supreme Court of the United States.

OCTOBER TERM, 1921.

UNITED STATES, APPELLANT,	}	No. 127.
v.		
BETHLEHEM STEEL COMPANY,		

This is an appeal by the United States from the decision of the Court of Claims that an implied contract existed between the United States and appellee (which will hereinafter be called claimant) whereby the United States is required to pay reasonable compensation to claimant for the use of its patented invention on a breech mechanism for ordnance. The case is based on a use which took place *before* the act of June 25, 1910 (36 Stats. 423, p. 851), which created the right to sue for the unauthorized use of patented inventions by the Government, so that it comes solely under the Fifth Amendment to the Constitution of the United States, and the question is purely one of contract.

While the amount of judgment in this case is not large, being \$67,000, the issues are extremely important, and the effect which the decision of this court will have on future cases is immeasurable.

STATEMENT OF FACTS BASED ON THE RECORD.

The United States, on November 7, 1891, entered into a written contract with the Bethlehem Iron Company whereby said company was to deliver to the United States one hundred 8, 10, and 12 inch guns. The guns were to be equipped with the breech mechanism which was then in vogue, and which was known as model 1888 M2. In accordance with the terms of the contract, the Bethlehem Iron Company began the manufacture of the guns and the equipping of the same with the model 1888 M2 breech mechanism. (Findings II, VII.)

On August 16, 1901, the Bethlehem Iron Company conveyed to the Bethlehem Steel Company, claimant, all of its property rights and franchises. Thereupon the Bethlehem Steel Company sought recognition by the United States as legal successor of the Bethlehem Iron Company, which recognition was, however, denied. The Bethlehem Iron Company admitted default in the performance of the November 7, 1891, contract, and the United States, denying successorship and privity between the Bethlehem Iron Company and the Bethlehem Steel Company, entered into a written contract on December 14, 1901, with the latter for the completion by it of the remainder of the work under the Bethlehem Iron Company's November 7, 1891, contract. (Finding VIII.)

On June 6, 1902 (32 Stat. L. 308), Congress extended certain of the Bethlehem Iron Company's contracts with the United States, (specifically ex-

cepting the November 7, 1891, contract,) to the Bethlehem Steel Company to perform. (Finding IX.)

Delivery was made by the Bethlehem Iron Company to the United States of all the guns contemplated by this November 7, 1891, contract with the exception of fifteen, and each of the guns so delivered included the model 1888 M2 breech mechanism. Before the completion of the contract, however, and after all but the fifteen guns had been delivered, a question as to the advisability of including the model 1888 M2 breech mechanism in the remaining fifteen guns arose in the War Department. (Finding VII.)

Prior to the making of the November 7, 1891, contract there had been considerable activity in endeavor to develop a breech mechanism which would be more efficient than the model 1888 M2. Several mechanisms were developed, both before and after the making of the contract, among which was one by Farcot, another by Canet, and still another by Fletcher, the latter being an officer of the United States Navy. (Findings VI, VII, XIV; Petition, par. X, XIV.)

During the performance of the November 7, 1891, contract, Owen F. Leibert, an employee of the Bethlehem Iron Company, made application for United States letters patent for an improvement in breech mechanism for ordnance. The Bethlehem Iron Company, after the filing of the patent application, knowing the interest of the United States in the development of breech mechanisms, notified the Bureau of Ordnance of the War Department, by

which bureau the contract was made on behalf of the United States, of the Leibert invention and of the fact that a patent application had been filed thereon. The company suggested to the Secretary of War that he facilitate the special examination of the application in the Patent Office. Because of the interest which the Bureau of Ordnance of the War Department had in breech mechanisms, the Secretary of War requested the Secretary of the Interior, on November 21, 1893, to examine the Leibert application specially. This request was granted and, on March 20, 1894, a patent issued on the application, which patent was assigned, on March 27, 1894, to the Bethlehem Iron Company. (Findings III, IV.)

Prior to the issuance of the patent the Bureau of Ordnance of the War Department requested (Petition, par. V; Finding V), the Bethlehem Iron Company to furnish it with a description and detailed drawings of the Leibert invention for the consideration of its merits. The company furnished drawings of the Leibert mechanism. (Petition, par. VI; Finding V.) Thereafter the Bureau of Ordnance requested the company's permission to use Leibert's plans for experimental purposes, without compensation, on a single 12-inch trial gun which was at that time being manufactured by the United States at Watervliet Arsenal. (Petition, par. X; Finding V.) This permission was granted. (Finding V.)

In accordance with the permission granted, the United States began the construction of a Leibert

breech mechanism. (Finding VI.) On December 23, 1895, while the Leibert breech mechanism was in course of construction at Watervliet, the Chief of the Bureau of Ordnance forwarded a drawing of another breech mechanism to the commanding officer at Watervliet Arsenal, and in the communication with which the drawing was inclosed he said:

This shows a third type of rack and pinion which appears to possess market merit. It is a modification of the Leibert design from which it differs mainly in the mode of operating the withdrawal of the block and in the pitch of the segmented rack to give increased power of rotation. (Finding VI.)

The Bureau of Ordnance also referred to the Leibert mechanisms as "modifications of the Farcot mechanism" (Petition, par. XIV, letter of Charles S. Smith).

He also requested the commanding officer at Watervliet Arsenal to manufacture this new mechanism which had been designed by John W. Stockett, an employee of the Bureau of Ordnance, and give it a trial if it seemed to be worthy of trial. (Finding VI.) At the time the Leibert mechanism and the Stockett mechanism were being considered at Watervliet Arsenal, two other breech mechanisms which had been designed by F. F. Fletcher of the Navy and Joseph Farcot were also being considered, all for the purpose of determining which, if any, were improvements over the old model 1888 M2 breech mechanism (Petition, par. X, XIV; Finding VI.)

After the Stockett drawings had been transmitted to Watervliet Arsenal, Stockett applied for and received patents on his breech mechanism. (Finding VI.)

The commanding officer at Watervliet reported to the Bureau of Ordnance that the Stockett design, which later became known as "model 1895," "Stockett design," and as "department's design," was deemed superior to the other designs, and that forgings had been ordered for its manufacture. The department's design (Stockett) was built, tested, and proved satisfactory to the Ordnance Bureau. (Finding VI.)

During this consideration of Fletcher, Farcot, department's (Stockett), and Leibert designs of breech mechanisms, the completion of the fifteen guns which remained to be delivered under the November 7, 1891, contract was held in abeyance, the Bureau of Ordnance having notified the Bethlehem Iron Company that should the department's (Stockett) design prove satisfactory "It may be deemed advisable in the future manufacture of the 12-inch guns on your contract of November 7, 1891, to follow this (department's—our insert) design. A general drawing of the 12-inch B. L. rifle model 1895 is inclosed herewith for your information." (Finding VII.)

On October 5, 1897, the Bethlehem Iron Company requested the Bureau of Ordnance to furnish it with drawings showing any changes which were to be made in the breech mechanism of the fifteen guns

remaining to be delivered under the November 7, 1891, contract, if these breech mechanisms were not to follow the model 1888 M2. (Finding VII.)

On October 12, 1897 (Petition, par. XVI), the Chief of the Bureau of Ordnance wrote to the Bethlehem Iron Company to the effect that the department had no objection to the company's making the last fifteen 12-inch guns which remained to be delivered under the November 7, 1891, contract so that the breech mechanisms would conform to the department's (Stockett) design. (Finding VII.)

On February 1, 1898, the company replied that it was willing to make these fifteen guns to conform to this new (department's) design, and to hold the United States free from all liabilities so far as the fifteen guns were concerned on account of any patent rights granted by the United States, provided that no modification should be made in the price to be paid for the guns. (Petition, Par. XVII; Finding VII.) This proposition was accepted by the Government on March 3, 1898, and drawings of the department's (Stockett) design were furnished the company. These fifteen guns were completed and equipped with the department's (Stockett) design breech mechanism, the Bethlehem Iron Company having secured a license from Stockett under his patents to cover themselves against him. (Finding VII.)

The delivery of the 100 guns was completed, paid for by the United States, and the December 14, 1901, contract which replaced the November 7, 1891, contract

under which the guns were made was thus terminated. (Finding VII.)

Claimant does not seek to recover any compensation for anything which was done in conjunction with these written contracts.

On November 5, 1902, the Bethlehem Steel Company, claimant, wrote to the Chief of the Bureau of Ordnance informing him that *it believed* that the wheel which was being put on the guns under the November 7, 1891, and the December 14, 1901, contracts, and which it understood the department was using on guns which the department was building elsewhere was the same as that described in claim 1, etc., of the Leibert patent. It inclosed a copy of the patent and requested the department's permission to discuss its views with it. (Finding X.) This request the Chief of the Bureau of Ordnance denied, and replied:

Referring to your communication of November 5, 1902, upon the subject of breach mechanism for guns of 1895 model, I have the honor to state that the claims in the patent of Owen F. Leibert owned by you are so much involved with the original designs of Farcot and the patents of F. F. Fletcher and John W. Stockett that the department does not feel that it is in a position to pass on the legal aspect of the case. If the Bethlehem Steel Company will bring suit to establish the points involved, this office will lend its assistance in bringing before the court all documents on hand pertaining to the subject.

(He had previously stated that he regarded Fletcher and Leibert as modifications of Farcot. Petition, par. XIV.)

On February 27, 1903, the Bethlehem Steel Company informed the Bureau of Ordnance that it had instructed its attorney to bring suit. (Finding XI.) That suit was not filed until November 16, 1905, two years and nine months thereafter, and is the present suit. This suit is based on guns which were manufactured by the United States and *not* by the Bethlehem Company, as shown by the letter of November 5, 1902 (Finding X), from the Bethlehem Company to the Bureau of Ordnance.

The principal issue in this case is whether or not a contract to pay reasonable compensation for the use of the Leibert invention arose by implication from the relation between the United States and the Bethlehem Company. The company contended in the court below that such a contract arose because the Government knew of the existence of the Leibert patent which was assigned to the company, and used the Government (Stockett) design of breech mechanism which the Court of Claims held (although it is open to considerable doubt) was covered by some of the claims of said patent. (Finding XV.)

On the other hand, the United States contends that even though the Government did know of the existence of the patent, no contract to pay the Bethlehem Steel Company is to be implied because, first, there was no offer of the invention for use such as that on which this suit is based (the claimant did not con-

sent to the use of the Leibert invention in the guns on which this suit is based, and which were manufactured by the United States and not the Bethlehem Company); second, there was no acceptance by the United States of any offer from the Bethlehem Company to permit the use of the Leibert invention in guns built by the Government, and consequently no "meeting of the minds," which this court has said is a prerequisite to the implication of a contract for the use of a patented invention; third, there was no intention to use the Leibert invention; and fourth, because the Government refused to make a contract when it had the opportunity so to do.

SPECIFICATION OF ERRORS.

Defendant submits:

1. That the Court of Claims erred in holding that an implied contract existed between the United States and claimant, whereby the United States is required to pay compensation to claimant for the use of its patented invention on a breech mechanism for ordnance.

2. That the Court of Claims erred in not dismissing the suit for want of jurisdiction.

3. That the Court of Claims erred in permitting the Bethlehem *Steel* Company (claimant) to recover for the use of the patented invention in those guns which were built by the United States before the Bethlehem *Steel* Company came into existence, and therefore before it acquired any rights under the patent on which this suit is based.

4. The Court of Claims erred in permitting the Bethlehem Steel Company (claimant) to recover for the use of the patented invention in *any* of the guns manufactured by the United States.

THERE WAS NO TENDER OF THE LEIBERT INVENTION FOR SUCH USE BY THE GOVERNMENT AS IS MADE THE BASIS OF THIS SUIT.

THE BETHLEHEM STEEL COMPANY DID NOT CONSENT TO THE USE OF THE LEIBERT INVENTION IN THE GUNS ON WHICH THIS SUIT IS BASED.

Bethlehem letter of July 5, 1894, was tender of use of the Leibert breech mechanism on only one trial gun on which no claim is based.

The officers of the Bureau of Ordnance of the War Department, ordnance experts, became acquainted with an embodiment of the Leibert invention by having blue prints thereof submitted to them in compliance with a request from the Bureau that it be permitted to manufacture a *single* gun for trial purposes. Permission was granted for the use of the Leibert invention in a single trial gun, and *the use was limited to one gun*, as clearly shown by the letter from the Bethlehem Iron Company to the inspector of ordnance, which letter is as follows (Petition, par. XI; Finding V):

JULY 5, 1894.

INSPECTOR OF ORDNANCE, U. S. A.,

South Bethlehem, Pa.

SIR: Answering your communication of June 29, informing us that the Chief of Ordnance desires to test the improved breech mechan-

ism for which patents have been secured by our Mr. Owen Leibert, in connection with the Farcot breech mechanism, which is being applied to the 40-caliber, 12-inch rifle now being assembled at the Watervliet Arsenal:

We write to state that we shall be glad to have the department use the rack and pinion covered by Mr. Leibert's design and patent in the *one trial gun above referred to* [italics ours] without claim for compensation on our part.

Yours, very truly,

BETHLEHEM IRON COMPANY,

R. W. DAVENPORT,

Second Vice President.

It is quite clear that the Bethlehem Iron Company granted permission to the Government to use the Leibert invention for a specific and restricted purpose, namely, the manufacture of *one trial gun* which the Government contemplated making, and in which it desired to embody the Leibert rack and pinion to test its efficiency. By the very terms of the grant the permission to use the invention was limited to one gun and to a specific gun, i. e., the 40-caliber 12-inch rifle being manufactured at Watervliet Arsenal at the time the permission was given.

Bethlehem letter of February 1, 1898, was no tender of use of the Leibert invention.

The letter of February 1, 1898, was not a tender of the Leibert invention, for the latter was not even mentioned or by inference referred to. But even if it be considered a tender of the Leibert invention, it

was for the use of the invention in the fifteen guns which the Bethlehem Iron Company was making under its written contract, and on which *no claim is based*, and was therefore for a restricted use and did not extend to guns to be made by the Government. *This suit is based on guns made by the Government.*

This later letter of February 1, 1898, from the Bethlehem Iron Company to the Chief of Ordnance, U. S. A., reads (Petition, par. XVII; Finding VII):

FEBRUARY 1, 1898.

CHIEF OF ORDNANCE, U. S. A.,

War Department, Washington, D. C.

SIR: Referring to your No. 4044 of October 12, 1897, and to a conversation the writer recently had with you relating to the *change* of breech mechanism in the manufacture of the last fifteen 12-inch B. L. guns under our 100-gun contract of November 7, 1891, *from the original design to the new design* recently adopted by the department:

We beg to say that we are willing to undertake to make these 15 guns to conform to model 1895 instead of model 1888 M2, the change to cover both the new form of breech mechanism and the gun itself, and to hold the United States free from all liabilities, so far as these 15 guns are concerned, on account of patent rights granted by the United States which may affect the *new form of mechanism* provided that no modification be made in the price to be paid for the guns as named in the contract on account of the change in the breech mechanism.

If this understanding is acceptable to the department, we should be glad to receive at your earliest convenience full details of drawings of the gun *and breech mechanism of the new design*, and will at once proceed with the manufacture. [Italics ours.]

Respectfully,

BETHLEHEM IRON CO.,

R. W. DAVENPORT,

Second Vice President.

This was not a tender of the Leibert invention, for no reference was made to said invention in this letter. On the other hand, the letter related to the incorporation of the Government's (Stockett) breech mechanism (which was also known as model 1895 and so identified in the letter) in the remaining fifteen guns to be delivered to the Government under the contract of November 7, 1891, the manufacture of which had been delayed when the possibility of the development of the Government design into a practical mechanism arose.

It is noteworthy that the Bethlehem Iron Company referred to the Stockett design in this letter as the "new form of mechanism" and "new design," and did not even *suggest* that it considered it as being covered by the Leibert patent.

It is not reasonable to construe this February 1, 1898, letter as an offer of the *Leibert* invention to the Government, for the Leibert mechanism was not therein mentioned, but the Government's (Stockett) mechanism was the only one referred to or discussed, being identified as "model 1895."

Furthermore, no tender of the invention for the use which was contemplated in this letter was necessary, inasmuch as the Bethlehem Iron Company was manufacturing the guns. The tender would, therefore, have been superfluous. The obvious purpose of the letter was simply to make sure that the Government would not reduce the contract price when the Government's (Stockett) mechanism was substituted for the old model 1888 M2, which former could be manufactured and installed at less expense than the latter, and as an inducement to maintain the price, the Bethlehem Company offered to protect the Government from patent attack because of the use of the new mechanism.

But even if the letter be considered a tender of the Leibert invention (which we contend it can not), this, too, like the permission granted for the manufacture of the one trial gun, must necessarily be considered permission to use the invention for a *specific purpose*, and to a specific extent, namely, in the *manufacture of the fifteen guns* which remained to be delivered under the written contract of November 7, 1891. There is no possible way in which this letter can be construed to be a *general* tender of the invention, so that if this be considered a tender at all, it extended only to the fifteen guns to be made under the contract *on which no claim is based*, the guns having been manufactured, delivered, and paid for.

The Bethlehem Iron Company was apparently very particular not to make the tender a general one, but to limit it to specific uses, and therefore, any use of

the Leibert invention after the delivery of the guns under the November 7, 1891, and December 14, 1901, contracts, and the termination of these contracts, was without permission of the Bethlehem Company and against its express desire that the invention should be used to the extents indicated, that is, in the *one trial gun and the fifteen guns which it made under the November 7, 1891, contract.*

But the letter of February 1, 1898, can not be considered as a tender of the Leibert invention.

The guns on which this suit is based were manufactured by the Government in its own shops without consulting the Bethlehem Company.

The Bethlehem letter of November 5, 1902, was not a tender of the Leibert invention, but shows conclusively that if the Government used the Leibert invention in the guns which it built and on which this suit is based it did so with no intention to use and no idea it was using the Leibert invention and against the desire of the Bethlehem Iron Company and without its permission.

There are but two other letters in the record which pertain to this phase of the situation—that is, whether or not general permission to the Government to use the Leibert invention was granted. One letter, dated November 5, 1902, from the Bethlehem Steel Company to the United States, reads in part as follows:

Under the department's orders we have been fitting to the 12-inch guns we are making

for the department under our contracts of November 7, 1891, and December 14, 1901, the compound gear shown in our prints 7374 and 7381. Copies of these prints are inclosed. We beg also to inclose a copy of United States patent 516768, for breech mechanism for ordnance, taken out by Owen F. Leibert on March 20, 1894. We *believe* that *the wheel* we are now putting on the guns, as stated, and which we understand the department is also using on these guns built elsewhere, of several calibers, is the same as that described in claim 1, etc., of the patent. We should be glad if the department at its convenience would give us an opportunity to lay before it more fully our views in this regard. (Finding X.)

This letter is the first communication, either written or verbal, between the United States and claimant (or the Bethlehem Iron Company, claimant's predecessor), in which the Leibert invention is even mentioned in connection with the guns which were being made by the Bethlehem Company under the 100-gun contracts (on which no claim is based) or the guns which the Government was making and in which the Government (Stockett) mechanism was being incorporated and on which this suit is based.

The claimant said: "*We believe* that the wheel the department is also using on these guns built elsewhere, is the same as that described in claim 1, etc., of the patent." This statement conclusively shows that when the Government began the manufacture of the guns on which this suit is based, and after con-

siderable progress had been made in the manufacture, the Government had no idea that when it was installing the Government (Stockett) breech mechanism in the guns it was using a breech mechanism covered by the claims of the Leibert patent. Even when the Bethlehem Steel Company wrote the letter it only stated that it *believed* that the Government (Stockett) breech mechanism was the same as that "described in claim 1, etc.," of Leibert's patent. It did not even state that it was the same as described in all of the claims, but only "claim 1, etc."—and the Court of Claims found that the Stockett breech mechanism was covered only by claims 1, 2, and 3 of the total seven claims of the Leibert patent.

It is of no moment here that, as found by the court, the Stockett mechanism *did* embody Leibert's invention. We have to do here only with the Government's knowledge of that fact.

The Government does not contest the propriety of the findings of the Court of Claims that the breech mechanisms covered by claims 1, 2, and 3 were used by the Government in and as a part of the Stockett breech mechanism, but calls attention to the fact that it arrived at this conclusion only after consideration of many prior art breech mechanisms which are made the subject of one of the findings and which are later reviewed in this brief.

The very object of this November 5, 1902, letter was to call the Government's *attention* to the belief of claimant that the Government (Stockett) mechanism was covered by the Leibert patent, and the letter

shows that the Bethlehem Steel Company was of the opinion that the Government did not know that when it used the Government (Stockett) mechanism it was using that which was covered by the Leibert patent; otherwise there was no excuse for the letter.

To this November 5, 1902, letter from the Bethlehem Steel Company the Chief of the Bureau of Ordnance responded on February 25, 1903:

Referring to your communication of November 5, 1902, upon the subject matter of breech mechanism for guns of 1895 model, I have the honor to state that the claims in the patent of Owen F. Leibert owned by you are so much involved with the original designs of Farcot and the patents of F. F. Fletcher and John W. Stockett that this department does not feel that it is in a position to pass on the legal aspect of the case. If the Bethlehem Steel Company will bring suit to establish the points involved, this office will lend its assistance in bringing before the court all documents on hand pertaining to the subject. (Finding X.)

The Government made it perfectly clear in this letter that it had no idea, when the letter was written, or before, that the Government (Stockett) mechanism was covered by the Leibert patent.

The Ordnance Bureau also stated that it would assist the claimant in every way possible to the end that all papers pertaining to the matter would be laid before the court. This was simply an offer to assist claimant in forwarding to the court the relevant papers and an assurance that the department would

not withhold papers from the court as it might well do under the law which permits the Secretary of any executive department to refuse a call of the Court of Claims when to comply with the call would be against public policy.

The most that can be said of this letter is that it acknowledged that the Government previously had no idea that it was using a mechanism covered by the Leibert patent, and *even then* could not determine whether it was or not.

Summarizing:

1. The July 5, 1894, letter was a permission to use the Leibert wheel and pinion, drawings of which the Bethlehem Iron Company had furnished the War Department, on a *single trial gun*.

2. If the February 1, 1898, letter be considered permission to use the Leibert invention (which we contend it can not), it was for the use in connection with the fifteen guns which remained to be delivered under the November 7, 1891, contract, and *extended no further*. The letter inferentially protested against any further use.

3. The November 5, 1902, letter merely shows that prior to the receipt thereof the Government had no intimation that when it used the Stockett mechanism it was using a mechanism covered by the Leibert patent, and that the Bethlehem Company called its attention to its *belief* that the Stockett mechanism was covered by the Leibert patent.

4. The February 25, 1903, letter shows that even then the Government could not determine whether

or not the Stockett mechanism was covered by the Leibert patent and suggested the bringing of a suit to determine the question, so that thereafter it could take this into consideration in formulating its future policy.

Therefore, there was no tender of the Leibert invention for a use such as that which is made the basis of this suit. Inferentially there was a warning or protest against the use of the Government (Stockett) mechanism without a recognition that it was covered by the Leibert patent, which recognition was specifically refused in the letter of February 25, 1903.

That there must be a convention between the parties or a coming together of the minds regarding the use of a patented invention by the Government before a contract, other requirements being satisfied, will be implied, is well settled by the following decisions:

Schillinger v. United States, 155 U. S. 163.

In this case the Architect of the Capitol was contemplating the letting of a contract to one Cook, whose bid for the laying of a pavement at the United States Capitol had already been accepted. The specifications for the pavement showed to the satisfaction of claimant that the Schillinger patent would be infringed, if the specifications were followed in the laying of the pavement. He protested to the Architect of the Capitol against the awarding of the contract to Cook, as Cook had no right to use Schillinger's invention. In spite of this warning, the contract was given to Cook on the ground that the

interests of the Government would be best served by awarding the contract and taking a bond to protect the Government from the suit threatened by claimant, especially in view of the fact that the validity of the Schillinger patent had not been established in any court.

Mr. Justice Brewer, speaking for the court, said:

Here the claimant never authorized the use of the patent right by the Government; never consented to but always protested against it; * * * There was no act of Congress in terms directing, or even by implication suggesting, the use of the patent. No officer of the Government directed its use and the contract which was executed by Congress did not name or describe it. There was no recognition by the Government or any of its officers of the fact that in the construction of the pavement there was any use of the patent, or that any appropriation was being made of claimant's property. The Government proceeded as though it were acting only in the management of its own property and the exercise of its own rights and without any trespass upon the rights of claimant. *There was no point in the whole transaction from its commencement to its close where the minds of the parties met or where there was anything in the semblance of an agreement.* (Italics ours.)

In *United States v. Palmer*, 128 U. S. 262, this court said:

“ ‘The claimant in this case invited the Government to adopt his patented infantry equip-

ments and the Government did so. It is conceded on both sides that there was no infringement of claimant's patent, and that whatever the Government did *was done with the consent* of the patentee and under his implied license.' We think that an implied contract for compensation fairly arose under the license to use and the actual use, little or much, that ensued thereon."

There are many other cases with which this court is familiar which show that the rule is that a contract can not be implied in any event if the owner of the patent withholds his consent to the use of the patented invention and such consent cannot be found in the case at bar.

THE GOVERNMENT DID NOT USE THE LEIBERT MECHANISM.

THE GOVERNMENT USED THE STOCKETT
MECHANISM.

We need no longer consider the November 7, 1891, and December 14, 1901, contracts, for no claim is based upon those contracts, and it was only necessary to consider them in the first instance in connection with the question as to whether or not claimant, during the performance of the contracts, made such a *tender* of the Leibert invention as would make it possible to imply a contract between the United States and claimant for the use of the Leibert invention in the guns which the Government itself manufactured and which had no connection whatever with the contracts.

As has been hereinbefore stated, the Government inventors, as well as the outside inventors, were active in attempts to devise a breech mechanism which would be more efficient than model 1888 M2. (Petition, par. XIV.) The employees of the Bureau of Ordnance of the War Department were attempting to solve the problem, as were also those of the Navy Department and the outside companies, including the claimant company.

F. F. Fletcher, of the United States Navy, devised a breech mechanism which seemed sufficiently practical to warrant serious consideration. (Petition, par. XIV; Finding VI.)

Joseph Farcot also devised a breech mechanism which received serious consideration by the War Department. (Petition, par. XIV; Finding VI.)

When the Leibert mechanism was submitted to the War Department by claimant, this was also considered by the Bureau of Ordnance, the Bethlehem Company having granted permission to the Government to make a single test mechanism without the payment of compensation. (Finding V.)

While these three mechanisms were being considered by the Bureau of Ordnance, and the Leibert mechanism was in the course of construction at Watervliet Arsenal, the Government mechanism was developed by John W. Stockett, an employee of the Bureau of Ordnance, and drawings of this mechanism were transmitted to the Watervliet Arsenal with orders to test the mechanism. (Finding VI.)

After the drawings of the Stockett device had been transmitted to the Watervliet Arsenal, the commanding officer reported to the War Department that this Government (Stockett) mechanism was deemed superior to the others, and that forgings for the same had been ordered made. (Finding VI.) So, with the Farcot, Fletcher, Leibert, and Government (Stockett) mechanisms before it, the War Department selected the latter mechanism, which had been developed by one of its own employees (Finding VI), and the selection of the Stockett mechanism was made almost four years (Petition, par. XVI, letter of Oct. 12, 1897; Findings III, V), after the War Department became acquainted with the Leibert mechanism but very shortly after Stockett's mechanism was invented. In other words for four years it failed to use the Leibert mechanism and when it finally changed from the old model 1888 M-2 it adopted Stockett and not Leibert.

Having thus selected the Government (Stockett) mechanism the Government proceeded to install it in a number of guns without requesting the permission of the Bethlehem Company to do so.

THERE MUST BE A DEFINITE INTENTION TO TAKE PRIVATE PROPERTY FOR PUBLIC USE BEFORE A CONTRACT, OTHER REQUIREMENTS BEING SATISFIED, WILL BE IMPLIED.

When, in advancing the interest of the public, the Government takes private property it must appear that it *intentionally* took the property before a contract to pay for the taking will be implied, other requirements necessary to the implication of a con-

tract being satisfied. Otherwise the mere taking, be it accidental or the improbable consequence of a governmental act, would render the Government liable, and, as said by Mr. Justice McKenna in *Bedford v. United States* (192 U. S. 217 at p. 224) "would prevent its exercise (the exercise of the right in navigable waters—a governmental right—our insert) by the dread of immeasurable responsibility."

In *United States v. Lynah* (188 U. S. 445) this Court held that where a dam was built across a river which resulted in the permanent flooding of a plantation above the dam so as to render the land useless, the land had been *taken* within the meaning of the Fifth Amendment of the Constitution of the United States.

The holding that the land was taken depended upon two facts: first, that its value was destroyed, and second, that the flooding was the *necessary* result of the building of the dam. It is quite obvious, therefore, that the flooding of the land being the "necessary result of the work," the court attached to the Government, by implication, the *intention* to take Lynah's plantation.

In *Bedford v. United States*, *supra*, which followed the Lynah case and was distinguished from it, the Government built a revetment along one bank of the Mississippi River to prevent the erosion of the bank. In so doing the channel and current of the river were so directed toward Bedford's land that it was overflowed. Mr. Justice McKenna speaking for the Court, said:

"The damage to appellants' land, if it can be assigned to the works at all, was but an *incidental consequence* of them." (*Italics ours.*)

The court held no contract could be implied and distinguished the case from the Lynah case because the damage to Lynah's land was the *direct consequence* of the building of the dam, while damage to the Bedford land was the *incidental consequence* of the building of the revetment. It seems, therefore, that the court will not imply an intention to take private property for governmental purposes where the damage or taking is the incidental consequence, or, in other words, not the *direct, certain, immediate, and necessary* result of the governmental act.

In the case of *Temple v. United States* (248 U. S. 121) the Government, believing it had the right, dredged certain land submerged by the waters of the Chicago River, which land, in fact, belonged to Temple. The court held no contract could be implied since the Government did not intend to exercise the power of eminent domain, or, in other words, did not *intend* to take private property.

From these decisions it is evident that when the Government takes property *not intending* to take private property no contract to pay for the property so taken will be implied.

In *Stefano Sanguinetti et al. v. United States* (55 C. Cls., 107 at p. 144) Judge Downey, after citing "Words and Phrases" to show that to constitute a contract express or implied "there must be that conviction, mutuality of will, and interaction of parties

generally expressed, though not very clearly, by the term 'privity.' Without this a contract by implication is quite impossible," very accurately stated the proposition for which we here contend:

"* * * And if contract liability is to result from taking of another's property by the United States is it not essential that there must have been an intention to take. The intention, of course, need not be expressed. It may also be a matter of implication. But it must be fairly inferable from all the circumstances. The inference may be justified when the taking by an overflow is the natural, known, or easily to be ascertained result of a governmental enterprise. As in the case of a dam across a stream erected to create a pool above, the land, if any, which will be overflowed thereby is easily and accurately to be ascertained and before, by modern engineering methods, as easily as after the erection of the dam, and such a certain, known, or easily ascertained result must be presumed to have been intended. But eliminate such conditions and substitute an entirely unanticipated result of an authorized Government work, a result not susceptible of advance ascertainment and perhaps due also to abnormal and unanticipated conditions, and there is no room for an implication of intention. And if the implied contract must arise out of the intention, express or implied, to take coupled with constitutional obligation to pay, it must fail for want of an essential element."

The law should be more strictly applied in patent cases than in realty cases, because of the difficulty in ascertaining whether or not a device used by the Government is public property or a patented invention.

In the case at bar the questions involved are allied to those decided by this court at the present term in an opinion by Mr. Justice McKenna in the Horstmann and Natron Soda cases, which related to the flooding of appellant's properties following the construction of a Government irrigation project. It appeared that "there was obscurity in the movement of the percolating waters, * * *, and necessarily there could not have been foresight of their destination nor purpose to appropriate the properties." This court said "it would border on the extreme to say that the Government intended a taking by that which no human knowledge would even predict. *Any other conclusion would deter from useful enterprises on account of a dread of incurring unforeseen and immeasurable liability.*" [Italics ours.] This language is peculiarly applicable to patent cases wherein not merely laymen but courts learned in patent law differ widely on the specific questions of validity, scope, and infringement, and it is frequently only on arrival in this high court that such matters are finally settled. "The doctrine of patents may truly be said to be the metaphysics of the law. The difficulty lies not so much in the general principle as in the minute and subtle distinctions which occasionally arise in the application of those principles."

(Story, J., in *Barrett v. Hall*, 1 Mason's R. 447, 472.) That it was as impossible to predict that the building of the Government (Stockett) breech mechanism would encroach upon the rights which the Bethlehem Company had under the Leibert patent as it was to predict that the construction of the Government irrigation project would be followed by the flooding of appellant's properties in the Horstmann and Natron Soda cases, is made plain by the letter of February 25, 1903, from the Chief of the Bureau of Ordnance to the Bethlehem Company, wherein it was stated that the bureau could not even then determine whether or not the Government (Stockett) mechanism was covered by the Leibert patent.

This court has held that when the Government adopts or takes an invention a contract will be implied when it takes the invention *knowing it to be private property*, or in other words, *intends to take* the property of a private citizen and therefore exercises the right of eminent domain.—(See *United States v. Palmer*, 128 U. S. 262.)

Summarizing, it must appear before a contract will be implied to pay for property taken by the Government that the Government *intended* to take property belonging to a private citizen and that in the taking it exercised the right of eminent domain consciously and knowingly and did not merely commit a tort.

THERE WAS NO INTENTION, ON THE PART OF THE GOVERNMENT, TO USE THE LEIBERT INVENTION.

ALL THE CIRCUMSTANCES SURROUNDING THE USE OF THE STOCKETT MECHANISM INDICATE THAT THE OFFICERS OF THE BUREAU OF ORDNANCE HAD NO IDEA THAT THEY WERE USING A MECHANISM COVERED BY THE LEIBERT PATENT.

At the outset it must be remembered that the officers of the Bureau of Ordnance of the War Department were ordnance experts, and not patent experts, and it does not appear that they ever considered the Leibert claims until after the manufacture of the guns was started and the Bethlehem Steel Company's letter of November 5, 1902, called their attention to their *belief*. In the patent they were not particularly interested, as evidenced by the fact that when they desired to test the Leibert mechanism they requested the Bethlehem Iron Company to furnish working drawings thereof. It was the drawings in which the officers were interested, for they were endeavoring to obtain a breech mechanism and with drawings they were familiar. So that the mere facts that the Leibert patent was submitted to the bureau along with a blue print of an embodiment of the Leibert invention by claimant, and that this bureau was cognizant of the existence of the patent, do not even argue that the officers of the Bureau of Ordnance had any idea that the Stockett device was covered by the Leibert patent.

Moreover, the officers of the Bureau of Ordnance were justified in considering this Stockett mechanism as a *third type of mechanism* and distinct from the Leibert device, for there was as much difference between the Stockett mechanism and the Leibert mechanism as there was between the Leibert mechanism (which was referred to by the Bureau of Ordnance as a modification of Farcot) (Petition, Par. XIV) and the Farcot or Fletcher mechanisms.

In the Farcot mechanism (see Farcot patent) the breech plug was opened and closed by the continuous movement of a *single* operating wheel which was actuated by a handle. In this mechanism the breech plug was provided with a straight rack and an arcuate rack. The operating wheel was mounted so that the teeth thereon would cooperate with the arcuate rack on the breech plug to rotate the latter, and so that the same teeth on the wheel would cooperate with the straight rack to withdraw the plug. The main difficulty with this arrangement was that the teeth in cooperating with the straight rack, because of their shape and arrangement, tended to rotate the plug, and as the plug was held against rotation, produced an undesirable torsional strain.

Fletcher (U. S. Patent 499531) followed with another change in the operating wheel and racks. He, too, had the arcuate and straight racks on the breech plug and a *single* wheel for actuating both by a continuous rotation. Judge Booth stated in his opinion that Fletcher had two wheels for operating the arcuate and straight racks (Opinion, p. 53, l. 6), but

this is obviously erroneous for Fletcher specifically states that the same wheel E and the same teeth thereon cooperate with and actuate both the arcuate and straight racks. (See Fletcher patent specifications, paragraph beginning line 92, p. 1, and paragraph beginning line 48, p. 2.) The Fletcher mechanism had the teeth on the arcuate rack meshing with the teeth on the wheel at a small angle to apply the maximum force to lock and unlock the breech plug. The teeth on the straight rack were made steep to facilitate the rapid withdrawal of the plug.

Each of the Farcot and Fletcher mechanisms had a straight rack and an arcuate rack on the breech plug and a *single* operating wheel adapted to cooperate with both, first to rotate and unlock the breech plug, and then to withdraw the plug. They differed from each other, essentially, in the form and arrangement of teeth on the racks and on the *single* wheel.

Leibert also devised a breech mechanism. He, too, had an arcuate rack and a straight rack on the breech plug and teeth on the *single* operating wheel which cooperated with both. The object of his invention (as stated in lines 65, etc., p. 1, of the specification) was to overcome the torsional strain which he said was present in some of the prior mechanisms of the type which rotated and withdrew the breech plug by a continuous motion. This he attempted to do by changing the form and arrangement of the teeth on the racks and the wheel. He used the side faces of the teeth on the wheel to rotate the plug and the

ends of the teeth to withdraw the plug, the former cooperating with the arcuate rack and the latter with the straight rack. But this did not overcome the difficulty entirely.

Then Stockett, having all of these devices before him, designed a breech mechanism and obtained patents on the same (U. S. patents 601,176, Mar. 22, 1898, and 601,177, Mar. 22, 1898). Stockett, as Farcot, Fletcher, and Leibert, had an arcuate rack and a straight rack on the breech plug and also had a *single* operating wheel with teeth to cooperate with both racks. He changed the position of the arcuate rack with relation to the threads on the breech plug so that it would be parallel with the same to overcome the strain on the threads in the rotation of the plug and make the unlocking of the plug easier. He also constructed the teeth on the wheel and on the straight rack to facilitate the withdrawal of the plug. These changes consisted in making all of the teeth on the operating wheel short and omitting one of the teeth so that the end face of the next adjacent tooth could engage the enlarged end tooth of the arcuate rack and so that certain of the other teeth on the operating wheel would engage the teeth of the arcuate rack to facilitate the initial withdrawal of the plug. Furthermore, he so formed the teeth on the operating wheel and straight rack that at least two would always engage with teeth on the straight rack of the plug to obviate the tendency to push the plug to one side and jam it, another thing which had never before been done.

So it is quite apparent that, starting with Farcot, each of the succeeding devices had the curved rack and the straight rack on the breech plug, and each had a single operating wheel with teeth thereon to cooperate, first, with the teeth on the arcuate rack to rotate the plug, and then with the teeth of the straight rack to withdraw the plug. Each differed from the other in the formation and arrangement of teeth.

The Court of Claims found that Leibert was the first to provide teeth on the operating wheel having both worm faces (to rotate) and spur or pinion faces (to withdraw). We do not dispute this, but after all, this only differs from the preceding mechanisms in the form and arrangement of teeth. The officers of the Bureau of Ordnance knew of all of these mechanisms and referred to Fletcher and Leibert as modifications of Farcot, and to Stockett as a *third type* of mechanism—a modification of Leibert.

The general similarity of and the differences in detail between all of the mechanisms and the granting of patents to Stockett are sufficient in themselves to induce the officers of the Bureau of Ordnance to believe that the Stockett mechanism was distinct from all the previous devices including Leibert. True, the Bureau referred to Stockett as a modification of Leibert, but it also said that this was a *third type* of mechanism and had previously referred to Leibert as a modification of Farcot.

The patenting of the Stockett design would be evidence to them that it was not covered by any prior patents.

Corning et al. v. Burden, 15 Howard, 252; 14 Lawyer's Edition, 683-691.

Ney Mfg. Co. v. Superior Drill Co. et al., 56 Fed. Rep. 152, citing *Goodyear v. Dunbar*, 1 Fish. Patent Cases, 474.

It was argued by claimant in the court below that the letter to the Watervliet Arsenal from the Bureau of Ordnance, with which the drawings of the Stockett mechanism were transmitted, informing the commanding officer of Watervliet that the Stockett device was "a modification of the Leibert design, from which it differs mainly in the mode of operating the withdrawal of the block and in the pitch of the segmental rack to give increased power for rotation," amounts to an admission that the Stockett mechanism was covered by the Leibert patent. This conclusion, however, in view of the surrounding circumstances, is untenable, and it might well have been said that the Stockett mechanism was a modification of Farcot, for instance. In fact, the Bureau of Ordnance had previously referred to "Leibert modifications of the Farcot breech mechanism." (Petition, Par. XIV, p. 7, Trans. of Record.) Furthermore, the Bureau referred to the Stockett mechanism as a *third type* which is conclusive evidence that it considered it a distinct creation—not even the same *type* as the preceding mechanisms.

It, therefore, is clear that the Bureau of Ordnance used the term "modification" to indicate a difference in mechanism, for even in the letter of December 23, 1895, from the Bureau to the Watervliet Arsenal it set forth wherein the differences lay.

The Court of Claims gave great weight to this expression of the Bureau of Ordnance, saying that it showed in "express language a recognition of plaintiff's title to the invention as well as an apparent conflict in patent claims between the inventors."

It is submitted that the court below was not justified in treating this statement as an acknowledgment that the Government (Stockett) breech mechanism was covered by Leibert's patent in the face of the statement that Stockett, was a *third type* of mechanism and the previous statement that the Leibert mechanism was a modification of Farcot and the later Bureau of Ordnance letter of February 25, 1903, wherein the Bureau stated that the Leibert claims were so much involved with the design of Farcot and the patents of Fletcher and Stockett that it was not in a position to determine the legal aspect of the case, the obvious, rational meaning of which was that it was not in a position to determine whether or not the Stockett mechanism was covered by the Leibert patent.

It does not at all follow that because one patented device is a modification of a prior patented device that the former is covered by the latter, as this court well knows.

Furthermore, before the Government began to build the one hundred and thirty guns on which this suit is based the Bethlehem Steel Company had taken a license from Stockett to use his invention, and Stockett had obtained patents on his invention. Both of these facts are calculated to lead the officers of the Bureau of Ordnance to believe that the Government (Stockett) device was not covered by the Leibert patent.

So, considering all of these facts, it can hardly be said that the mere assertion by the Ordnance Bureau that the Stockett mechanism was a "third type" or "modification" of the Leibert mechanism amounted to an admission that the former was covered by the patent on the latter.

There is another vital consideration, in the determination of whether or not the Government used the Government (Stockett) mechanism believing it to be and intending to use the Leibert invention, and that is, that when the Bureau of Ordnance contemplated building a Leibert breech mechanism in the one trial gun which was being manufactured at Watervliet Arsenal it requested permission of the Bethlehem Company to incorporate this mechanism in the gun without payment of compensation, but when it desired to and did build the Government (Stockett) mechanism in the one hundred and thirty guns manufactured by it, it did not mention to the Bethlehem Company, that it was going to build this mechanism nor did it ask its permission. The relation between the Bureau of Ordnance and the

Bethlehem Company was friendly, clearly, and it is to be presumed that, having previously requested permission to use the Leibert invention in one trial gun, when the Bureau later incorporated the Government (Stockett) mechanism in the one hundred and thirty guns it would have again requested permission to use the invention. But it did not do this. This fact in itself shows that the officers of the Bureau had no idea that they were using and no intention to use that which was covered by the Leibert patent.

Finally, when the *belief* of the Bethlehem Company that the Government (Stockett) mechanism was brought to the attention of the Bureau, it, even then, stated, in effect, that it was in no position to determine whether or not the Stockett mechanism was covered by the Leibert patent and expressly refused to acknowledge that it was.

In *Russell v. United States*, 182 U. S. 516, this court said:

His (claimant's—our insert) rifle was not adopted; another was. There was no concession of his rights.

The court found that there was no contract.

In *Berdan Firearms Mfg. Co. v. United States*, 156 U. S. 552, the findings showed that the Government officers, when using the Adams invention,

regarded Berdan as the inventor of this extractor ejector

and

that therefore they were using the Springfield musket, Berdan's invention. [Italics ours.]

Under these conditions the court found a contract existed.

That, in the case at bar, the officers of the Bureau of Ordnance did not believe that they were using Leibert's invention and had no intention to use the same is conclusively shown by the fact that when they wrote the letter of February 25, 1903, they stated that the Leibert device was so involved with Farcot, Fletcher, and Stockett that the department was in no position to pass on the legal aspect of the case. This latter obviously means that the department could not determine whether or not it was using the Leibert invention.

**THE GOVERNMENT BELIEVED IT HAD A PROPRIETARY
RIGHT TO USE THE STOCKETT MECHANISM.**

It may be contended on behalf of claimant that when the Government used what was known as the Department's (Stockett) or model 1895 breech mechanism it did so knowing it to be private property, and that, knowing it to be private property, it expected to pay the owner for the use of that property, just as it does for the use of real or any other property which it acquires as private property.

The court below in its opinion indicates that it took this view (opinion, p. 50), but its conclusion can not be justified in the face of the fact that the breech mechanism used by the Government was one developed in its *own* Bureau of Ordnance, and by one of its *own* employees, and was repeatedly referred to as the *Department's design*.

It is apparent that the officers of the War Department, knowing that the mechanism which it used was developed *in its Bureau of Ordnance by one of its own employees*, believed that the Government had the proprietary right to use the invention. Indeed, that this was their attitude is evident, for they referred to the mechanism as the department's design, and they did not request anyone's permission to use the mechanism. So, if the Government did not believe that it was using private property, but the property which it had the proprietary right to use because of the relation of its employees to it, it can not be said that it expected to pay claimant, since it was not using the Leibert mechanism, but the mechanism which had been developed by Stockett, its employee, and since it never acknowledged the Stockett mechanism to be covered by the Leibert patent.

**COMPARISON BETWEEN THE CASE AT BAR AND RUSSELL
v. UNITED STATES, 182 U. S. 516.**

While the Government's position in the case at bar is considerably stronger than it was in the Russell case, in which this court held that no contract could be implied, the facts are strikingly similar, as hereinafter shown by parallel column tabulation:

RUSSELL v. UNITED STATES.

1. This was a suit on an alleged implied contract between the Bureau of Ordnance of the War Department and claimant.

2. The Government was considering rifles with a view to adopting one for use in the Army.

3. Claimant owned a United States patent on a rifle.

4. Claimant submitted a copy of his patent and a rifle made in accordance with his invention to the War Department for the department to determine the advisability of its adoption.

5. The War Department failed to adopt claimant's rifle.

**UNITED STATES v. BETHLEHEM
STEEL CO.**

1. This was a suit on an alleged implied contract between the Bureau of Ordnance of the War Department and claimant.

2. The Government was considering breech mechanisms with a view to adopting one for use in the Army.

3. Claimant owned a United States patent on a breech mechanism.

4. Claimant submitted a copy of his patent and drawings of a breech mechanism made in accordance with its invention to the War Department for the department to determine the advisability of its adoption.

5. The War Department failed to adopt claimant's breech mechanism.

6. The War Department adopted a rifle known as the Krag-Jørgensen rifle.

7. Claimant, by letter, called the attention of the War Department to the fact that the Krag-Jørgensen rifle adopted by it was an infringement of his patent, pointed out the fact that the resemblance between the two was in the magazine, and asked that his claim be considered.

8. The War Department informed claimant that if the Government should proceed to manufacture the Krag-Jørgensen rifle, claimant's course would be to "bring a suit against the Government in the Court of Claims after manufacture has progressed."

6. The War Department adopted a breech mechanism known as the Stockett, Department's, or Model 1895 mechanism.

7. Claimant, by letter, called the attention of the War Department to its belief that the Stockett, or Department's, breech mechanism was the same as that covered by the Leibert patent, pointed out the fact that the resemblance was in the "wheel," and asked that it be given an opportunity to lay before the department its views.

8. The War Department informed claimant that it could not determine the legal aspect of the case, and suggested the bringing of a suit.

9. The Krag-Jørgensen (not the Russell) rifle was used by the Government.

10. A patent application on the Krag-Jørgensen rifle, which the Government used, was pending in the United States Patent Office.

11. The War Department was informed by the Commissioner of Patents that "the invention of H. I. Krag and Erik Jørgensen for improvements in machine firearms has been examined and the invention has been found patentable in view of the state of the art."

12. The Russell patent was part of the prior art.

9. The Government (Stockett) breech mechanism (not the Leibert) was used by the Government.

10. Patent applications on the Government (Stockett) breech mechanism were pending in the United States Patent Office and subsequently patents issued thereon.

11. The War Department was informed by the issuance of the Stockett patents that the Government (Stockett) mechanisms were patentable in view of the state of the art.

12. The Leibert patent was part of the prior art, was cited against the Stockett application and was withdrawn by the Patent Office as a reference and the Stockett patents issued.

13. The case was brought before the statute of June 25, 1910, creating the right to sue the United States for the infringement of a patent.	13. The case was brought before the statute of June 25, 1910, creating the right to sue the United States for the infringement of a patent.
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POINTS OF DIFFERENCE.

1. The Government was notified before it began to use the Krag-Jørgensen rifle that the rifle was an infringement of claimant's patent.	1. The Government was not notified of the <i>belief</i> of the Bethlehem Company that the Government (Stockett) breech mechanism which it used was covered by the Leibert patent until after the use of the device began.
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2. Claimant had never previously made any Krag-Jørgensen rifles for the Government.	2. Claimant had made Stockett breech mechanisms for the Government under a license from Stockett, and did not then intimate that it or the Government had any idea that the Stockett mechanism was covered by the Leibert patent.
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In this Russell case Mr. Justice McKenna, speaking for the court, said:

It was not deemed necessary even to grant his request for a hearing. His rifle was not adopted; another was. There was no concession of his rights. He was told twice that his case could not be determined by the Ordnance Department. There was probably, however, no thought of an arbitrary invasion of his rights. The Ordnance Office sought the opinion of the Commissioner of Patents, and was informed that the Krag-Jørgensen improvement in machine firearms had been examined, and the invention had been found patentable in view of the state of the art. The patent of petitioners was part of the state of the art. * * * Indeed, the Ordnance Office twice wrote Capt. Russell that his case could not be determined by it. No contract, therefore, based on the action of that office can be claimed. If petitioners have suffered injury, it has been through the infringement of their patent, not by a breach of contract, and for the redress of an infringement the Court of Claims has no jurisdiction. This doctrine may be technical. If the United States was a person, on the facts of this record (assuming, of course the petition to be true), it could be sued as upon an implied contract, but it is the prerogative of a sovereign not to be sued at all without its consent or upon such causes of action as it chooses. It has not chosen to be sued in an action sounding in tort, this court has declared, as we have seen.

In *Jos. L. Harley v. U. S.*, 198 U. S. 229, an employee of the Bureau of Engraving and Printing made an invention and drawings thereof, which latter illustrated substantially the device described in the patent which the employee later obtained. The drawings were submitted to the Government, and the court found that the officers who adopted the device knew that Harley (claimant) was an employee of the Government and believed that he would not expect or demand compensation.

The court held that there was no contract, as there was no convention between the parties nor a coming together of the minds.

In *Schillinger v. United States*, *supra*, the Government made a contract for the laying of a pavement at the United States Capitol. The petitioner claimed that the method of laying the pavement was an infringement of his patent, and protested against it. The court said, in effect, that the action sounded in tort, inasmuch as the existence of a protest showed obviously that there was no meeting of the minds.

This is analogous to the case at bar, for when the Bethlehem Company granted permission to the Government to use the Leibert invention it limited the use to a specific extent. This amounts to a protest against any possible future use of the Leibert invention to a greater extent. Later when the Bethlehem Company conceived the idea that the guns which it was making under contract with the Government, and which it believed the Government was

making elsewhere, were covered by its patent, it again protested against the use.

On the other hand, in the cases in which this Court found an implied contract to exist, it appears that when a patented invention was used the officers of the Government used it *knowing that the thing which they used was the claimant's invention and intended to use claimant's invention*. For instance:

In *Palmer v. United States*, supra, a board was convened by the Secretary of War to consider and recommend the adoption of infantry equipment. Palmer submitted his patented invention to this board, and the board recommended to the Secretary of War that Palmer's device be adopted.

Justice Bradley, speaking for the court, said:

The claimant in this case invited the Government to adopt the patented *infantry equipment*, and the Government did so. [Italics ours.]

The board recommended the adoption of the *actual infantry equipment* which had been submitted to it, and thereby acknowledged that what was to be used (and which was afterwards actually used) was claimant's invention. This is quite different from the case at bar, for what was adopted was not the mechanism submitted to the department by the Bethlehem Company, but was, on the other hand, the Stockett mechanism, so that it can hardly be said that there was, by this act of adoption, any acknowledgment that the Government proposed to and did use the Leibert invention.

When the Government takes an invention for its own use, it must take it *as private property*, and it can not be presumed that it takes it *as private property* when that which it uses is merely within the scope of the claims of claimant's patent, but is actually the invention of another who is one of its own employees.

In *Berdan Firearms Mfg. Co. v. U. S.*, 156 U. S. 552, Mr. Justice Brewer, speaking for the court on the question of contract, said:

That the peculiar contrivance was devised by Adams, one of its employees, and that it differs from the Berdan invention in the use of a spiral instead of a flat spring, in no manner diminishes the patent rights of Berdan or his assignee, the petitioner, or changes the fact that the use made by the Government of the extractor ejector was an infringement upon such rights.

But as heretofore stated, something more than a mere infringement, which is a tort, and not within the jurisdiction of the Court of Claims, is necessary to enable petitioners to maintain this action. *Some contractual liability must be shown* [italics ours], and furthermore, the import of these findings is this, that the officers of the Government charged specially with the duty of superintending the manufacture of muskets *regarded Berdan as the inventor of this extractor ejector* [italics ours]; that the difference between the spiral and flat spring was an immaterial difference; *that therefore, they were using the Springfield musket,*

Berdan's invention; that they used it with his permission as well as that of his assignee, the petitioner, and they used it with the understanding that the Government would pay for such use as for other private property which it might take, and this although they did not believe themselves to have the authority to agree upon the price.

The court held that under these circumstances a contract existed. This case is distinguishable from the case at bar in that in the former the officers of the Government acknowledged title to the invention in Berdan and used the Adams device which was designed by one of its own employees, *knowing that they were using the Springfield musket, Berdan's invention*. In the case at bar, however, there is nothing to show that when the War Department used the Stockett device it had any idea that it was using that which was covered by the Leibert patent. But, as has heretofore been pointed out, all of the surrounding facts show that the officers of the Government believed that they were using a mechanism which did not interfere with the Leibert invention, among those surrounding circumstances being the granting of patents to Stockett on his device and the taking of a license by the Bethlehem Company under the Stockett patents as well as the repeated reference to the Stockett device as the "Department's design."

UNITED STATES v. SOCIÉTÉ ANONYME DISTINGUISHED.

The Court of Claims relied to a great extent upon *United States v. Société Anonyme des Anciens Etab-*

lisements Cail (224 U. S., 309), but this case is distinguishable from the case at bar, for in the latter there was no acknowledgment that the Stockett mechanism, which was used by the Government, was covered by the Leibert patent. Moreover, the findings show that there was no idea that Stockett was covered by Leibert, nor was there any intention to use the Leibert mechanism. The facts are quite otherwise in the *Société Anonyme case*, for there was an acknowledgment that the mechanism which was used by the Government contained some features of the De Bange patented mechanism. As this Court said (opinion p. 322):

“But the position taken in that letter was, as we have seen, abandoned, and it was declared that so far as the De Bange patent was valid its claim for royalties was, in the opinion of the Bureau of Ordnance, a proper one and would be sustained by the courts.”

And further (opinion, p. 313):

“The invention has, ever since its adoption, been known in the service of the United States as the ‘Be Bange gas check.’”

So, while we accept fully the principle of the *Société Anonyme case*, we do contend that it is not here applicable because in that case there was an acknowledgment that that mechanism which the Government made contained some of the De Bange patented devices, but in the case at bar there was no acknowledgment that the Stockett mechanism which the Government used contained any of the features or was covered by the Leibert patent. Nor was there

any idea that such was the case or the slightest intention to use the Leibert mechanism.

EVEN PRESUMING (ARGUENDO) THE EXISTENCE OF A CONTRACT THE BETHLEHEM STEEL COMPANY HAS NO RIGHT TO RECOVER ON THOSE MECHANISMS WHICH WERE MANUFACTURED BEFORE SAID COMPANY CAME INTO EXISTENCE.

The suit on which this appeal is based is for the use of the Leibert invention in one hundred and thirty guns. It appears in the findings (Findings II, VII, VIII; Opinion on Demurer, Rec., p. 14, par. 4) that some of the guns were manufactured *before* the Bethlehem Steel Company came into existence, and during the life of the Bethlehem Iron Company, but how many of the guns were manufactured after the Bethlehem Iron Company went out of existence does not appear. Since an unliquidated claim against the Government is not assignable, the Bethlehem Steel Company has no right of action in connection with those guns which were manufactured before it came into existence.

The Court of Claims erred in allowing the Bethlehem Steel Company compensation for the use of the invention in all of the one hundred and thirty breech mechanisms, and if this court finds that a contract existed, the case should be sent back to the Court of Claims for determination as to how many of the breech mechanisms were manufactured during the life of the Bethlehem Steel Company.

THE BETHLEHEM STEEL COMPANY HAS NO RIGHT TO RECOVER IN ANY EVENT.

If there was a contract at all for the use of the Leibert invention (which is denied by the Government), it was with the Bethlehem Iron Company, and

when that company went out of existence the contract terminated with it. The relation between the Bethlehem Steel Company and the United States with respect to contracts was made positive in the act of June 6, 1902, 32 Stat. at Large 308, wherein it was provided:

All contracts of the Bethlehem Iron Company * * * shall be *completed* by its successor, the Bethlehem Steel Company * * * upon giving good security * * *, conditioned for the performance by it of said contracts * * *. [Italics ours.]

It is quite obvious that this act merely provides for the passage of those contracts from the Bethlehem Iron Company to the Bethlehem Steel Company which required the performance of some overt act by the Bethlehem Steel Company. It does not include the passage of any such implied contract as is alleged in claimant's petition. So the alleged contract, not being in the category of those referred to in the act of Congress, did not pass from the Bethlehem Iron Company to the Bethlehem Steel Company, and hence the latter company can not maintain a suit upon the contract, even if a contract did exist with the Bethlehem Iron Company, its predecessor.

CONCLUSIONS.

It is urged that, in order to find, by implication, the existence of a contract for the use of a patented invention by the Government, it must be found—

1. That the Government recognized, in claimant, the title to the particular invention which it subsequently used.

2. That the use of the invention must have been with claimant's consent.

3. That the Government must have used the particular invention of the patent knowing that the mechanism which it used was private property and intending to take private property.

It is evident that these conditions were not satisfied in the case at bar, since—

1. There was no tender of the invention and claimant did not consent to, but protested against, the general use of its invention, and

2. There was no acceptance of any offer to permit the use of the Leibert invention and no intention to use the Leibert invention in guns built by the Government such as are made the basis of this suit.

It is respectfully submitted that the judgment of the Court of Claims should be reversed, and the case remanded with directions to dismiss for want of jurisdiction.

Respectfully submitted.

JAMES M. BECK,

Solicitor General of the United States.

HARRY E. KNIGHT,

LUCIUS E. VARNEY,

DANIEL L. MORRIS,

Special Assistants to the Attorney General.



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IN THE
Supreme Court of the United States

OCTOBER TERM, 1921.

THE UNITED STATES, *Appellant*,

vs.

BETHLEHEM STEEL COMPANY.

No. 127.

BRIEF FOR APPELLEE.

PREFATORY:

This is an appeal by the United States from a judgment of the Court of Claims in favor of the claimant in a suit brought by the Bethlehem Steel Company upon the invitation (p. 23) of the Chief of Ordnance, United States Army, to determine what royalty, if any, is to be paid by the government for the use of the Company's patented invention for a breech mechanism upon a number of guns manufactured by the government in its

own arsenals. The suit is founded upon an implied contract whereby the government became obligated to pay the appellee for the use of its patent property.

On the first page of its brief, the appellant justifies this appeal on the ground that, though the amount involved is "not large"—it is \$67,000—"the effect which the decision of this court will have on future cases is immeasurable." The brief, throughout its fifty pages, does not again refer to these immeasurable consequences, nor explain what they are. The fact is that the decision in this case can never affect a single future suit, for the reason that, by the act of Congress approved June 25, 1910, "To provide additional protection for owners of patents," inventors are authorized to sue the government in tort, for infringement, as well as in contract. All cases arising prior to the passage of that act are long since barred by limitation. The patents mentioned in this record have all expired and cannot give rise to future litigation.

The Court should understand at the outset that all transactions in question in this suit occurred prior to the passage of the act of 1910, so that the rights of the parties are governed by the law as it existed before that date.

In Finding XIV, page 47 of the record, a number of patents, illustrating the state of the breech mechanism art prior to the patents involved in this case, are mentioned and "by this reference thereto are made part of this record." The appellant did not incorporate copies of these patents in the transcript of record on appeal. Copies, however, will be lodged with the clerk by the appellee, so as to be available to the court in considering the case.

The statement of facts contained in appellant's brief is not satisfactory to the appellee. Therefore, in accordance with Rule 21, paragraph 3, the facts are re-stated in this brief.

STATEMENT OF FACTS.

1. The Transactions.

The principal facts in the case have never been in dispute. As set forth in the petition (pp. 1-11), they were admitted upon demurrer, and appear again in the opinion of the Court of Claims on the demurrer (pp. 12-14), in the Findings of Fact (pp. 19-48), and in the opinion of the court below on the merits (pp. 48-49). As they are not complicated and are already stated four times in the record, no more than a brief summary need be given here.

Owen F. Leibert, an employe of the Bethlehem Iron Company, invented an improvement in breech-operating mechanisms for large guns, applied for a patent, and assigned his application to his company (p. 19). The company at that time was engaged in manufacturing, under contract with the War Department, one hundred large calibre guns (p. 19); ordnance experts from the Bureau of Ordnance were necessarily on duty as inspectors at the company's work, and the Ordnance Department was hence kept advised of the company's work in the production of guns. The Chief of Ordnance was informed of the application for patent, became interested in it, and requested the Commissioner of Patents to expedite action upon it, saying that "this invention is deemed of great importance to the Ordnance Department" (p. 19). The application was expedited accordingly, and patent was issued. The Bureau of Ord-

nance then asked the company for "full information as to the said Leibert invention and patent," and this the company furnished (pp. 19-20). Next, the Chief of Ordnance, in writing, asked the company's permission (p. 20), to use the Leibert device, without compensation, on one experimental gun which the government was constructing at its arsenal at Watervliet, New York. The company granted the permission by letter of July 5, 1894 (p. 20), and the Bureau of Ordnance prepared plans for the manufacture of the Leibert invention for this purpose (p. 20). When manufactured, however, the experimental gun contained not only the Leibert device, but a slight improvement upon it, evolved and patented by John W. Stockett, Chief draughtsman of the Bureau of Ordnance (p. 20). This we shall refer to presently. The mechanism containing Leibert's invention with Stockett's improvement became known as the "1895-Model" (pp. 20, 49). On July 1, 1896, the Chief of Ordnance wrote to the company that the Department contemplated changing the construction of 8-inch, 10-inch and 12-inch guns "*in future manufacture*" from the model (1888 mechanism) then in use to the 1895 model, if tests then in contemplation should prove satisfactory (p. 21). To this the company never made any objection.

Thereafter, the Chief of Ordnance concluded that the 1895 model was a substantial improvement over the breech mechanisms (1888 model)

which had been ordered for the guns being made by the company under the 100-gun contract, and directed that the new invention be substituted for the original design in fifteen 12-inch guns then remaining to be manufactured under that contract (p. 21). The company agreed to do this "provided that no modification be made in the price to be paid for the guns as named in the contract, on account of the change in the breech mechanism" (p. 21). The Chief of Ordnance accepted the proposal (p. 21), and it is apparent, therefore, that he agreed in effect to pay, and did pay, the company, as compensation for the use of its invention (with the Stockett improvement), the difference between the cost of manufacturing the original design and that of manufacturing the Leibert mechanism. For the use of the Stockett improvement as it entered into the 1895 model on these fifteen guns, the company obtained a license from Stockett and paid him for it (pp. 21, 49).

Thereafter, the War Department proceeded, in its own arsenals, to make many more guns—134 of them (p. 58)—in which it installed the new invention. It is compensation for the use of the Leibert invention on those guns which the claimant seeks in this suit. On November 5, 1902, the company wrote to the Chief of Ordnance, stating that it understood the Department was using the Leibert device on guns built elsewhere than at Bethlehem, and asked him to consider its claim arising out of the use of its patent on those guns (p. 22). He replied (p. 23):

"Referring to your communication of November 5, 1902 upon the subject of breech mechanism for guns of 1895 model, I have the honor to state that the claims in the patent of Owen F. Leibert, owned by you, are so much involved with the original designs of Farcot and the patents of F. F. Fletcher and John W. Stockett that this department does not feel that it is in a position to pass on the legal aspect of the case. If the Bethlehem Steel Company will bring suit to establish the points involved, this office will lend its assistance in bringing before the court all documents on hand pertaining to the subject."

On August 6, 1901, the Bethlehem Iron Company conveyed all of its assets to the Bethlehem Steel Company, the claimant herein (pp. 21, 22) and, by act of Congress approved June 6, 1902, the transfer of all contracts between the Bethlehem Iron Company and the Government (with one exception) to the Bethlehem Steel Company was legalized (p. 22).

2. The Patents.

The device protected by the claimant's patent, that is to say, the thing that Leibert invented, is lucidly described in the opinion of the Court below at pages 51 to 53 of the record, and a brief account is there given of the prior state of the art. As the Court below said, all the elements which entered into it were old, but Liebert conceived a broadly new combination of the old elements.

As correctly stated in the appellant's brief, the United States Army, prior to the mechanism here in controversy, was using on its large guns the breech mechanism known as "Model 1888 M 2," or "the three motion mechanism." The breech-block had interrupted or mutilated screw threads arranged to interlock with corresponding internal mutilated threads in the breech of the gun, and was provided with a longitudinal rack and a curved segmental rack. These racks were engaged by two different pinions, one to engage the curved rack and turn the block, and the other to engage the longitudinal rack and give the breech block its in-and-out movement, termed the movement of translation. Three separate and distinct acts by the operator were necessary to work the 1888 mechanism. In withdrawal after firing, the operator rotated one crank, which turned the block to unlock it. He then seized and turned another different crank to pull the block out onto the tray. He then grasped the tray handle and swung the tray and block to one side. These movements were reversed in loading. All this required trained skill, and was slow and objectionable. In the heat of action, the operator would become confused in the order of movements. As stated by the Court of Claims (p. 51):

"For many years inventors applied their genius in an endeavor to create a mechanical device that would remove the breech plug from the breech-block of a gun in such a way

as to secure certainty, speed and accuracy. It was a task of magnitude and great importance. The mechanism, if operative and valuable, must condense in compact and rather simple form mechanical elements capable of functioning in three distinct ways. The breech-block and plug of *all Army guns* is the interrupted screw system, combined with the mushroom pin and the De Bange gas check. In order to remove the plug it first requires a rotary motion to disengage it from the interrupted screw threads and likewise overcome whatever adhesion may possibly obtain by reason of the tremendous pressure on the gas check. Secondly, a longitudinal motion to withdraw the breech plug from the breech-block, and lastly, a swinging motion to remove the plug after withdrawal to a position incapable of retarding the quick reloading of the gun. Obviously the reverse of these movements is as indispensable as the initial process."

The Court of Claims further found that numerous inventors had been "assiduously engaged in this very art for a period of time bordering on a quarter of a century" (p. 55), and had not attained the desired result. This desired result was: to carry out all three movements in inserting or in removing the block, by turning a single crank continuously in the same direction, without any jamming or binding pressures, and with a small actuating wheel giving ample power especially for the translating movement in withdrawing.

We will not refer briefly to the best of these ef-

forts prior to Leibert, namely, the Canet system and the Farcot and Fletcher system.

The Canet system is shown in the United States Canet patent 539974 and the British Canet patent 11858 of 1897 (p. 47). In the Canet gear, the breech-block had a curved rack with helical or screw teeth, and a longitudinal rack with plain rack teeth. A single operating wheel having two successive or tandem sets of teeth engaged the two racks on the block, the set of helical or screw teeth on the wheel engaging the screw teeth of the curved rack to turn the block. After turning the block, the next, and separate, set of pinion teeth on the same wheel or sector engaged in the pinion teeth of the straight rack, and gave the block its movement of translation.

The Court of Claims correctly found (p. 53) that "the Canet device of 1895 is in use in guns of small caliber and has proven its worth. *In army guns of large caliber its use has proven in-operative.*" As it further says (p. 53), "he (Canet) required two distinct sets of teeth adapted to his wheel in 'tandem fashion' to thus operate." In the Canet operating wheel the two separate and successive sets of teeth necessarily made a large wheel or sector and, as the radius arm was long compared with the radius of the operating handle, the power applied was not effective for large guns with heavy breech-blocks.

The second system of the prior art of single operating wheels has two examples, differing only

in the angle or pitch of the helical teeth. They are Farcot and Fletcher. The Farcot device is shown in the British patent to Farcot No. 3407 of 1887 (p. 47). In this system, as in Canet, the breech-block had a curved or segmental rack and a straight or longitudinal rack. But *both racks had helical or screw teeth*, and the operating worm wheel had helical or worm teeth throughout. This gave the three motions by turning one handle and a small-radius wheel could be used. But in giving the block its movement of translation (in or out) a large part of the power applied acted to try and force the block sidewise and jam it in its guides. This was due to the wheel teeth all being helical or worm teeth, which applies the force in two directions, that in one direction causing large friction and wear on the guides. It could not be turned by hand, and power was required, which barred it in practice. It was not even patented in the United States.

Lieut. Commander Fletcher of the United States Navy improved this Farcot mechanism for the smaller navy guns, by simply changing the angle of the worm teeth on the wheel and racks, and obtained a narrow United States patent, No. 499531, thereon (p. 47). The 45-degree angle teeth of Farcot were changed about 20 degrees, which gave greater power in rotating the block, *but less power in translating the block*. This was used on some of the smaller navy guns and was practicable where the gas pad was fixed to the block and rotated

with it. The greatest power was required in rotation and was obtained by the change of angle. This greater power would loosen the pad which is always expanded and jammed in the block by the explosion, and small power was needed in translation.

But it was impracticable in the large U. S. Army guns, for there the gas pad was not fixed to the breech-block, the latter rotating independently of the pad and not loosening it during turning. Hence, in these army guns, the greatest power was required in translation of the block and in thereby loosening the jammed pad. This the Fletcher system would not accomplish.

Both Farcot and Fletcher lost much of the hand power applied in friction and wear on the breech-block guides, and while the Farcot-Fletcher system was better than the Canet in using a smaller wheel, yet it had the inherent objection of wasting a large part of the power applied in heavy friction on the guides.

Canet used two successive sets of teeth on a single operating wheel, while Farcot and Fletcher used only worm or helical teeth thereon. Both gave large losses in power, and as hand power has necessary limits, the operation was uncertain and liable to fail.

These are the closest prior devices to that of Leibert, who was the first to solve all these troubles and combine the advantages of all. The key to the Leibert invention lies in his devising a *com-*

pound operating wheel;—i. e., one having “compound” teeth, each tooth with two operating faces,—combined with a curved rack having helical or worm teeth and with a straight rack having plain spur teeth; thus giving both rotary and translating movements to the block by a single small wheel, with effective power in both movements. The worm faces of the compound teeth engage the worm or helical faces of the curved rack to turn, and then the plain or spur faces of *the same teeth* engage the plain faces of the spur teeth on the straight rack to move in or out. All three movements are given by one continuous turning of the wheel and no power is lost in translation, because spur tooth faces alone are then in action.

This combination was wholly and entirely new. The racks, one with worm teeth and one with spur teeth, were old; also the swinging tray. But, as the Court of Claims found (p. 54):

“the vital predominant element of the Leibert device rests in the unique compound operating wheel; it is the one feature upon which the efficiency of the device depends, and this wheel, provided with the single set of teeth, is adapted to be used as worm and spur teeth, is the distinct mechanism which rotates the breech plug and removes it from the breech.”

Leibert was the first, in this or any art, to use the compound-tooth operating wheel to impart movements of rotation and translation to the same body, such as a breech plug. The Court of Claims again

refers (p. 57) to "*the wonderfully simple but central idea of Leibert, and that was the construction of a compound operating wheel with such tooth projections thereon that a single tooth, arranged as specified, would function both as a worm and as a spur tooth. This record discloses no device which approaches it in novelty and usefulness.*"

As the Court also said (p. 54):

"The advantages of the Leibert device are at once apparent; his new wheel brought forth a simple, and what is just as important, a *compact* mechanism small enough in size to be employed without undue interference with the proper use of the gun and avoiding the 'torsion strain' noted in the expert testimony as the condemning feature of the prior patents."

The Leibert wheel can be made of any desired size, since its radius is independent of the two racks, because the same teeth act with different faces, on both racks. No jamming force is produced in translation, and the small wheel gives great power in starting the withdrawal and dislodging the expanded and jammed plug. To assist in starting the outward movement of the plug, Leibert also discloses a special "starting lug" or tooth, to which we shall refer later.

In the photograph facing page 22 of the record, the plug appears locked in the breech, and this photograph also shows the essence of the Leibert invention, which lies in the compound cross-cut

teeth seen on the operating wheel at the right of the plug. The Court will observe that in the photograph two of these compound teeth are in engagement with the curved or segmental rack, fixed to and projecting from the outer end of the breech-block. When the crank in the lower right-hand corner of the picture is turned, this compound operating wheel turns, and the upper worm faces of the compound teeth on the wheel which, in effect, operate as a series of screws, impart a rotary motion to the segmental or curved rack and to the plug to which it is attached, thus performing the operation of disengaging the screw-threads within the breech from those on the plug, and unlocking the plug. A continuous motion of the crank, without stopping, then causes the longitudinal spur faces, or, as we may say, the cross-cut straight sides of the same teeth, to engage the plain spur teeth of a longitudinal rack set in the side of the plug, thus creating the withdrawal motion which brings the plug out of the breech, and lets it rest upon the tray or carrier. The same continuous motion of the crank then swings the carrier with the plug upon it around to the side, out of the way of the gunner, as it appears in the photograph facing page 23.

The essence of Leibert's invention consists in placing upon each of the compound teeth of the operating wheel a worm face to impart the rotating motion necessary to rotate the segmental rack, and thus lock and unlock the plug, and a

spur or pinion face to engage the straight rack on the side of the plug, and thus perform the withdrawal motion. Teeth with worm faces, having torsional or screwing movements, were old in this art, and so were teeth with spur faces, but, although a single mechanism embodying the dual function of rotating and then withdrawing the plug had been a great desideratum, no one prior to Leibert ever thought of putting the two kinds of faces on the same set of teeth and combining them with the operating wheel. Leibert thus accomplished the desired result, not, indeed, by "a new function; but a new machine, a new device, a new compound wheel, made up of old and well-known elements in the art, and functioning in a new and novel way" (p. 55). The Court below said:

"No assertion can possibly be sustained that the Leibert compound operating wheel as described in the specifications and claims of the patent, in combination as shown, is not a new and novel device. The prior art discloses no similar one as adapted to and used in combination with breech loading ordnance, and, despite the astute technical distinctions and descriptions found in the conflicting expert testimony in the record, the physical, obvious fact, apparent and indisputable from an examination of the numerous patents in the record, shows no device similar in identity or operating in the same manner as the Leibert wheel."

And again (p. 57) :

“This record discloses no device which approaches it in novelty and usefulness.”

3. The Patents, (b) Stockett.

The 1895 model, which is the device that the government used on all the guns referred to herein, consisted of Leibert's exact device with a few purely mechanical changes invented and patented by John W. Stockett, chief draughtsman of the Ordnance Department, U. S. Army (p. 20). These mechanical changes were added to Leibert's device by the Ordnance Department.

Stockett's changes are of slight importance in comparison to the Leibert invention, and are not necessary to its successful operation, but the appellant's brief attaches so much factitious importance to the Stockett details that some description of them must be given, lest the Court be misled.

Stockett's two patents are in the record (pp. 34-47.) In examining them, the Court can relieve itself of considerable labor by disregarding all disclosures except such as relate to the operating wheel, breech-block racks and teeth. With his improvements in the tray or carrier we are not concerned. It should be remembered that, in his capacity of chief draughtsman of the Ordnance Department, Stockett had been familiar with the Leibert patent for more than three years before he filed his applications (pp. 20, 27, 37, 43).

In the first of his patents (No. 516, 768, p. 24),

Stockett simply took the Leibert invention and changed the position of the segmental or curved rack very slightly, to make it parallel with the mutilated locking threads of the block. By examining the two upper drawings (Figs. 3 and 4) on page 35 of the record, the Court can see exactly what Stockett did. These figures represent the end of the plug with the segmental rack attached. On Figure 4, the segmental rack is the upright piece with the shaded teeth upon it, having a small figure 3 at the top and 4 at the bottom. By looking at this carefully, it can readily be seen that this rack does not stand parallel with the face of the end of the plug. The space between the rack and the end of the plug is slightly more at the top than at the bottom. The rack is tilted just a trifle. Now observe the screw threads on the plug. It will be seen that the little tilt given to the segmental rack causes it to stand precisely parallel to the screw-threads. The little tilt is the Stockett improvement and (so far as this case is affected) that is all of it. This does not affect the operation, but merely the cutting of the worm teeth on the operating wheel. It may give a slight advantage in manufacture, but none in function or operation. Theoretically, in one case there is line contact and in the other point contact. In practice there is no difference.

The history of the Stockett patent in the Patent Office shows that he was instantly confronted with the Leibert patent and a contest of considerable

extent ensued (p. 58). As a result, every one of Stockett's claims (so far as they relate to this part of the mechanism) was rejected on Leibert, and was then narrowed and strictly limited to the tilted position of the segmental rack. Thus (p. 41):

Claim 1: "In a gun, the combination of a threaded breech block having a longitudinal rack thereon parallel with its axis *and a segmental rack parallel with the screw threads*, with a worm wheel having its threads interrupted transversely on a line parallel with the axis of the wheel, forming rack-teeth."

Claim 3: "A breech plug for guns having locking threads upon its periphery *and a rotating rack parallel with said locking threads*."

Claim 4: "A breech-plug for guns having locking threads upon its periphery, and a segmental tooth rack upon its rear, *the pitch line of the segmental rack being parallel with the locking threads*."

Claim 9: "A threaded breech-plug for guns having a rotating rack formed integrally therewith *and parallel with the locking threads on the plug*."

Claim 10: "A threaded breech-plug for guns having a translating rack and a rotating rack formed integrally therewith, *the latter rack being parallel with the locking threads on the plug*."

Stockett also made another improvement, which is the subject of his other patent (No. 601,177, p. 43). This is of even less consequence than the former. It consists solely (so far as concerns the issues here) of the omission of one of the teeth on the operating wheel, in order to admit of placing a widened tooth or "starting lug" upon the segmental rack. In effect, he transferred Leibert's prolonged tooth or "starting lug" from the wheel to the rack. This is a mere equivalent transposition of parts and in each case the initial tug of the withdrawal movement is taken up in an enlarged and strengthened tooth. In Leibert this is the "projection or starting lug O" (p. 31) on the wheel, and in Stockett it is the "elongated tooth 15" (p. 54). The lug 15 and cut away portion of wheel 20 of Stockett coact and function precisely as do the similar parts O and P of Leibert. There is no change in function or operation.

4. The Patents, (c) Leibert and Stockett.

The relation of the Stockett patents to that of Leibert, and their relative importance, will be apparent upon an attempt to subtract the one from the other.

If you subtract Stockett's invention from a gun constructed on the 1895 model, you leave an efficient operating machine, invented by Leibert. If, however, you subtract Leibert, you do not leave a working machine. In fact, you leave nothing, not because Stockett did not invent something, but be-

cause his invention lies in minute detail improvements on Leibert and it is necessary to have the Leibert machine physically present to support the Stockett improvement (p. 58). Otherwise, it is a purely subjective conception. The Chesire cat was able to withdraw completely and leave its grin behind. If a similar phenomenon were possible in heavy ordnance, you could withdraw Leibert from Stockett and leave a *position* floating before the vision.

As the Court below said (p. 58):

“Stockett doubtless improved the Leibert patent, but even to the unskilled it is indisputably apparent that the invention of Leibert covered by his letters patent was the real functioning element of the Stockett mechanism. If you abstract from the Stockett device the Leibert tooth projections, having each a worm and spur face placed on the circumference of the compound gear wheel described in the Stockett specifications and claims, the device would be absolutely impotent and valueless to perform the indispensable movements for which it was intended. Stockett modified the Leibert patent by both transfer and omission of certain detail elements, but retained the identity of the Leibert mechanism and utilized it to furnish the vital element concededly indispensable to perform the three movements for which all inventors had been striving in this identical art.”

5. The Patents, (d) Leibert and the Prior Art.

On the other hand, you can subtract from Leibert the whole prior art, *so far as it relates to spur and worm faces on the same set of teeth, combined with a wheel*, and leave an efficiently operating machine, for Leibert, and Leibert only, shows upon the wheel teeth combining spur and worm faces, which perform the function theretofore performed by two sets of teeth or by other devices. To substantiate these statements, we refer the Court to the patents incorporated in Finding XIV (p. 47), and especially invite to the Court's attention the latter part of that finding, in which the Court below found as a fact that:

"None of these patents discloses the combination with the breech and plug of a gun, of a curved rack and a straight rack upon the plug, and a compound operating wheel provided with teeth having both worm faces engaging the curved rack and spur or pinion faces engaging the straight rack, as called for by the Leibert patent."

And again, in the opinion (p. 57):

"The distinctions between Leibert's compound operating wheel and those which preceded it are so manifest that the untrained eye of the layman may easily detect them. The preceding inventors failed to conceive the real vital features of the Leibert wheel; every single device they brought forth or attempted to put in operation clearly missed the wonder-

fully simple but central idea of Leibert, and that was the construction of a compound operating wheel with such tooth projections thereon that each single tooth arranged as specified would function both as a worm and as a spur tooth. This record discloses no device which approaches it in novelty and usefulness."

In this connection, we may remark that the Court below had (as it said in the opinion, p. 55) the benefit of the testimony of patent experts called by both sides. This Court is deprived of that advantage in its examination of these patents, and we think therefore that great weight should be given to the conclusions at which the Court below arrived with that testimony before it.

The Court of Claims found as a binding fact that "the combination of Claims 1, 2 and 3 of the said Leibert patent are found in said Model 1895 breech mechanism, manufactured and used by the defendants" (Finding XV, p. 48). It found as ultimate facts "that the breech mechanisms covered by Claims 1, 2 and 3 of the said Leibert patent possessed patentability, novelty, utility and invention," and that "the said breech mechanisms were used by the defendant's War Department" (Finding XVI, p. 48).

6. The Leibert and Stockett Structures.

Appellant's brief, page 90, states that "the officers of the Bureau of Ordnance of the War De-

partment were ordnance experts, and not patent experts," and concludes on page 88 that the facts do not "argue that the officers of the Bureau of Ordnance had any idea that the Stockett device was covered by the Leibert patent."

Now let us first consider these officers as "ordnance experts" and mechanical engineers specializing in ordnance, and look at the facts. Assume that they had seen and knew the Canet system and the Farcot and Fletcher system; that in both of these the single operating wheel was intended to give all the desired movements; and that the Fletcher system was in use by the Navy. As ordnance engineers they knew of the serious and fatal objections to those systems for the army guns, and they knew that in none of them was there a compound operating wheel with double acting tooth projections, each having two operating faces, one a helical face to act on the worm teeth of a curved rack, and another a plain spur face to act on spur teeth of a plain straight rack. They also knew that in Farcot and Fletcher, both the curved rack and the straight rack had worm teeth, and that in Canet the operating wheel had two set of teeth set upon it in succession or in tandem, one set following the other. They further knew that in Farcot and Fletcher all the wheel teeth were worm teeth and that each wheel tooth had only one operating face.

Now when the Ordnance Office received the complete information and made their drawings of the

straight Leibert system, they knew as engineers and experts that the Leibert compound wheel was absolutely a new and unique element in breech-block mechanism for ordnance. They could not help knowing that Leibert was the first to use a compound tooth wheel, wherein each compound tooth used one tooth face (its helical face) to engage and actuate the helical or worm teeth on the curved rack, and another rack or plain face on the same tooth to engage and actuate the plain or spur teeth on the straight translating rack.

The cross-cut compound character of the Leibert wheel gave it a striking and characteristic appearance, which even to a non-expert stamped it as an entirely new thing. To the engineer, it was not only a novel and unique new element, but it performed entirely new functions in a new way. It could not be mistaken either in structure or functions.

In the Stockett form it still possessed the same appearance, resulting from the cross-cut worm teeth, each with two faces, and it performed exactly the same functions in the same way. Each compound tooth used its worm face to actuate the worm teeth of the curved rack and its plain spur face (formed by cross-cutting) engaged and actuated the plain spur teeth of the straight or translating rack. Moreover, in addition to this striking novelty, in Leibert and his follower Stockett, the curved rack had worm teeth and the straight rack had spur teeth, whereas in Farcot and Fletcher,

both racks had curved worm or helical teeth. And in Leibert and Stockett the pinion teeth each had two different kinds of faces,—one curved and the other straight,—to act on the two different kinds of rack teeth; whereas in Canet one belt of teeth had only worm faces, and the succeeding tandem set had only spur faces, and the larger Canet wheel was distinguishable at once, by reason of its two different tandem sets of teeth.

All these clear distinguishing new features are present both in Leibert and Stockett, and, therefore, it is entirely clear that appellant's conclusion is erroneous. The ordnance experts could not help knowing that Stockett, with his two slight modifications, used the novel and unique Leibert combination. Again, the drawings of the Leibert patent show various modifications and they must therefore have seen that detail changes could be made within his broad invention,—and that without any legal knowledge of the Leibert patent. Certainly Stockett, and through him his superior officers, knew, in getting up working plans, through the time when he was thinking of and laying out detail changes, that he was using the Leibert system *in toto*.

ARGUMENT.**I.**

The government used the claimant's invention under an implied contract between the government and the claimant. Hence the Court of Claims had jurisdiction to entertain the cause.

(A) The claimant's case fulfills the requirements of an implied contract with the government as laid down by this court.

This point was twice fully considered by the Court below, and is exhaustively argued, with abundant citation of authority, in the opinion on demurrer, at pages 15-17 of the record, and in the opinion on the merits, at pages 49-51.

In a case decided shortly prior to the decision of this case in the Court below, Chief Justice White set forth clearly and briefly the requirements that must be fulfilled by the claimant in a case of this kind, in order to be entitled to relief in the Court of Claims. He said (*Cramp & Sons v. International Curtis Marine Turbine Co.*, 246 U. S. 28, 40):

“(c) That despite the want of authority to implead the United States, yet where an officer of the United States, within the scope of an official authority vested in him to deal with a particular subject, having knowledge of existing patent rights and of their validity, appropriated them for the benefit of the United States by the consent of the owners, express or implied, upon the conception that compensation would thereafter be provided,

the owner of the patent right taken under such circumstances might, under the statute law of the United States permitting suits against the United States on contracts, express or implied, recover by way of implied contract the compensation which might be rightly exacted because of such taking.

(d) That where an officer of the United States, in dealing with a subject within the scope of his authority, infringed patent rights by a taking or use of property for the benefit of the United States without the conditions stated justifying the implication of a contract, however serious might be the infringement or grave to the holder of the rights the consequences of such infringement, the only redress of the owner was against the officer, since no ground for implying a contract and securing compensation from the United States obtained."

Applying the foregoing principles to the case at bar, it will be found that the claimant (appellee) has sustained all the elements of the burden resting upon it as enumerated by Chief Justice White. Thus:

(1) The Chief of Ordnance was an "*officer of the United States acting within the scope of an official authority vested in him to deal with the subject.*"

This will hardly be disputed.

(2) He had "*knowledge of existing patent rights*"; i. e., the Leibert patent.

He asked the Commisioner of Patents to expedite action on Leibert's application. Thereafter he asked for and received from the Bethlehem Company full information and drawings of the device.

(3) He had "*knowledge of the validity*" of the Leibert patent.

The patent is *prima facie* evidence of its own validity (II Robinson on Patents, 254, and cases cited). Chief Justice White cannot have meant that the official knowledge should go further than this, since there could be no other source of knowledge of the validity of a patent, except in the case of the very few patents which have been attacked in court and adjudicated to be valid by the court of last resort. The Chief of Ordnance, however, has this further knowledge of the validity of the patent in suit: The record shows that he was acquainted with the art and the prior patents and was accustomed to dealing with patents (p. 50). He was, therefore, in a position to discover for himself that the patent was—as the Court of Claims subsequently found it—valid. The court below found that the Ordnance Department had various patents before it and that "a real, substantial competition was in progress" (p. 50). As was re-

marked by Mr. Chief Justice Taft in *Hildreth v. Mastoras*, decided at this term:

"The presumption of priority and novelty which arises from the granting of a patent must have greatly increased weight when the claim of the inventor is subjected to such close and careful scrutiny under the stimulus of a heated contest."

Further, the Chief of Ordnance asked and received permission or license to use claimant's invention on one gun without compensation. This involved an admission of the validity of the patent.

(4) The Chief of Ordnance "*appropriated*" the claimant's patent "*for the benefit of the United States.*"

Finding XV (p. 48) of the Court below is conclusive on this point:

"The combination of devices in Claims 1, 2 and 3 of the said Leibert patent are found in the said 'Model 1895' breech mechanism manufactured and used by the defendants as in Finding VI hereinbefore set forth."

In view of this finding, it is curious to notice that a large part of the government's brief is devoted to arguments to

show that the claimant's invention was not appropriated by the United States; and, in the course of this extended argument, no reference is made to this finding, save that, in passing, on p. 68, appellant's counsel observes that this finding "is open to considerable doubt." It is open to no doubt, being binding on this Court and not reviewable.

(5) The appropriation was made "*by consent of the owners, express or implied.*"

The claimant furnished detailed information of the invention to the government at its request (p. 19). In Finding VII (p. 21) the court below found:

"On July 1, 1896, the Ordnance Bureau wrote to the Company that the Department contemplated changing the construction of 8-inch, 10-inch and 12-inch guns IN FUTURE MANUFACTURE from the model then being used to the said Model 1895, if tests then in contemplation should prove satisfactory."

The company made no objection to the use of Model 1895 by the government in future manufacture. It is noteworthy that the Government's brief makes no allusion to this finding. In a letter to the Chief of Ordnance of November 5, 1902 (p. 22), the claimant said:

"We believe that the wheel we are now putting on the guns as stated

[i. e., the fifteen 12-inch guns being made by the claimant for the government] and which we understand the Department is also using on its guns built elsewhere of several calibers, is the same as that described in Claim 1 *et seq.* of the said [Leibert] patent."

We have, then, a notice from the government to the claimant that the government contemplated using the device; the absence of any objection by the claimant to such use; and, later, a letter from the claimant to the government, calling attention to the fact that the government had used it as contemplated, but making no objection to such user.

(6) The appropriation was made "*on the conception that compensation would be thereafter provided.*"

The Chief of Ordnance asked and received permission to use the device on one gun "without compensation" (p. 20). Thereafter he ordered its installation on fifteen other guns being manufactured by the claimant under contract, and paid for that installation by agreeing to make no deduction from the contract price by reason of the saving in cost due to this installation (p. 21). He expressed an expectation to use the device "in future manu-

facture" on still other guns (p. 21), and did so use it. In his reply to the Company's letter of November 5, 1902 (p. 22), heretofore quoted, he made no denial of the claim, but merely said (p. 23) that he was unable to determine whether other patents might not be involved, and therefore suggested that the company bring suit to determine—not whether the government should pay for its use of the claimant's patent—but whether any other patents were involved; and he offered his assistance in the trial of the cause. As the Court remarked (p. 50):

"The Department was dealing with patentees and patent rights openly and fairly, without a thought of denying payment to the lawful owner of the patent."

As this Court said in *United States v. Societe Anonyme, etc.*, 224 U. S. 309, *infra*:

"The purpose to deliberately take property of another without the intention that he shall be compensated—in other words to do a plainly wrongful act,—cannot be imputed to them [the ordnance officers] without the most convincing proof."

It is evident that both parties assumed the existence of a contractual obligation. That it did not exist was first suggested after this suit was brought and the case had been transferred from the War Department to the Department of Justice. The parties expected an amicable suit to determine whether certain patents other than that of claimant were present in the Model 1895 device, and to adjust claimant's compensation according to the extent to which these other inventions might be found to be included in the device used. The contractual obligation is established by the intent of the parties, and this cannot be defeated by a legalistic theory of which they had no notion at the time of their transactions. As this court said in the recent case of *Tempel v. United States*, 248 U. S., 121, 131:

“When an implied promise to pay has once arisen, a later denial by the government (whether at the time of suit or otherwise) of its liability to make compensation does not destroy the right in contract and convert the act into a tort.”

The foregoing is the claimant's case in outline. We shall enlarge upon parts of it. Owing to the discursive character of the government's brief, we regret that a considerable amount of reiteration will be unavoidable.

(B) *Principles of law applicable to implied contracts.*

We may first cite a few fundamental authorities, laying down the principles governing cases of implied contract, and then proceed to a discussion of the principal authorities relied on by both sides as most closely touching the issues in the case at bar.

More than a century ago, Chitty, in his text book on contracts (Chap. 1, Sec. 1) summarized the law of implied contract* as follows:

"There is a large class of contracts called *implied* contracts, which rest merely on construction of law, and in which there is, properly speaking, no assent of the parties to the terms by which they are bound. What the law looks to in these cases is, not the agreement of the parties, but their circumstances or acts; and from these circumstances or acts, the law raises the duty and implies the promise by which in the individual case, the party will be bound. In the case of an express contract, the law measures the extent of each party's duty by the terms to which he has expressly agreed; in the case of an implied contract, the terms are such as reason and justice dictate in the particular case; and which there-

*There are, of course, two classes of implied contracts, (1) those in which the implication arises in fact from the circumstances; (2) those in which a contract is implied in law on grounds of public policy and good conscience, as where the law implies a contract to perform a duty, or where one is permitted to waive a tort and sue in contract. The latter class are called quasi-contracts, and possibly will not support the jurisdiction of the Court of Claims. The present case falls in the first category.

fore the law presumes that every man undertakes to perform. * * * An express contract is proved by an actual agreement; an implied contract by circumstances, *or the general course of dealing between the parties*, but whenever a contract is once proved, the consequences resulting from the breach must be the same."

And again:

"It is clear that a promise to a particular effect may be implied in any given case, from the circumstances of the parties having invariably, on former and similar occasions, adopted any particular terms or course of dealing."

The "previous course of dealing" between the parties at bar consisted of a recognition by the government of the claimant's right to compensation for the use of its patent. This is shown by the government's solicitation of permission to use the device on one gun without compensation, and by the payment,—in effect,—of compensation for its use on fifteen guns, as we have pointed out on page 118, *supra*.

As the Court of Claims said in the opinion on the demurrer herein (p. 13):

"That by reason of the facts stated the government thereby recognized said invention and patent as the property of said Bethlehem Iron Company."

For statements of the basic principles of liability in cases of implied contract where the United States is a party, we refer the Court to *United States v. Great Falls Manufacturing Co.*, 112 U. S., 645; *Hollister v. Benedict & Burnham Mfg. Co.*, 113 U. S., 59, where it was said:

"If the right of the patentee was acknowledged, and, without his consent, an officer of the government, acting under legislative authority, made use of the invention in the discharge of his official duties, it would seem to be a clear case of the exercise of the right of eminent domain, upon which the law would imply a promise of compensation, an action on which would lie, within the jurisdiction of the Court of Claims such as was entertained and sanctioned in the case of *The United States v. The Great Falls Manufacturing Co.*, 112 U. S., 645."

Bigby v. United States, 188 U. S., 400; *United States v. Palmer*, 128 U. S., 262, where Mr. Justice Bradley said:

"The principal objections raised on the part of the Government against the judgment are, to the jurisdiction of the Court of Claims and the form of the action. It is assumed that the ground of complaint on which the petition is founded is a tort and not a contract; that the assertion in the petition of an implied contract is not warranted by the facts of the case; and that the Government cannot be sued in the Court of Claims for a mere tort.

This assumption of the appellant is erroneous. No tort was committed or claimed to have been committed. The Government used the claimant's improvements with his consent; and, certainly, with the expectation on his part of receiving a reasonable compensation for the license. This is not a claim for an infringement, but a claim of compensation for an authorized use—two things totally distinct in law, as distinct as trespass on lands is from use and occupation under a lease. The first sentence in the original opinion of the court below strikes the key note of the argument on this point. It is as follows: 'The claimant in this case invited the Government to adopt his patented infantry equipment and the Government did so. It is conceded on both sides that there was no infringement of the claimant's patent, and that whatever the Government did was done with the consent of the patentee and under his implied license.' We think that an implied contract for compensation fairly arose under the license to use, and the actual use, little or much, that ensued thereon. The objection, therefore, that this in an action for a tort falls to the ground."

United States v. Lynah, 188 U. S., 445. This was an action for damages caused by the overflow of land incident to the improvement of a navigable river. Mr. Justice Brewer made an exhaustive review of the authorities, and we solicit the court to examine the decision. The opinion, by cogent argument and abundant citation, supports this thesis:

“Wherever, in the exercise of its governmental rights it [the government] takes property the ownership of which it concedes to be in an individual, it impliedly promises to pay therefor.”

(C) *United States v. Societe Anonyme, &c.*, (“*De Bange Gas Check case*”), 224 U. S., 309, applied to this case.

The foregoing are general statements of principles. There are one or two decisions which, on the facts, are more immediately applicable to the case at bar, and must therefore be discussed in some detail. They are:

To be applied to this case:

United States v. Societe Anonyme, &c., 224 U. S., 309,
United States v. Berdan Fire Arms Co., 156 U. S., 552.

To be distinguished:

Russell v. United States, 182 U. S., 516,
Schillinger v. United States, 155 U. S., 163.

For comment:

Harley v. United States, 198 U. S., 229,
Bedford v. United States, 192 U. S., 217,
 and one or two others.

The Court below, as well as the claimant, relied upon the case of *United States v. Societe Anonyme, &c.*, 224 U. S., 309 (43 Ct. Cls., 25), familiarly known as the De Bange Gas Check Case. Of all

the authorities this is the one which most closely parallels the case at bar. The Court below quoted from it extensively.

Colonel De Bange, a French officer, had invented and patented a pad to be attached to the inner end of a breech plug in large guns, to prevent the escape of the gases which generate in the breech. It was adopted by the French Government and described in the technical journals, and, as a matter of professional knowledge, became known to the ordnance officers of the American Army and Navy. A board of army and navy officers visiting France for the purpose of acquiring professional information, mentioned it in their report, saying "The De Bange gas check is universally employed." On another occasion, the American Naval Attache at London procured one of the De Bange devices from the French Minister of War and sent it home to the Navy Department. Subsequently both the army and navy adopted a device which embodied the essential features of the De Bange invention with certain improvements upon it, invented and patented by American officers. These improvements occupy with reference to the De Bange invention precisely the same relation that the Stockett improvements bear to the Leibert invention in the case at bar. After the government had begun to use the device, Colonel De Bange wrote letters to the American Minister at Paris and the Secretary of the Navy, calling attention to the fact that his

"idea" has been "borrowed without my knowledge," and added, "I appeal to the sentiment of equity of the Government of the United States, convinced that it will recognize easily the justice of my claim." Upon receipt of the De Bange letter, the Secretary of the Navy wrote a reply which bears a strong resemblance of the letter of the Chief of Ordnance of December 23, 1895, appearing on page 20 of the record in the case at bar. We give them in parallel columns:

De Bange:

"The gas check which has been adopted for the naval guns of six-inch calibre and upwards resemble in certain features that described in U. S. patent 301,220, issued to Colonel De Bange. It also differs from it materially in particulars which were original in this Bureau."

Leibert:

"This [Model 1895] shows a third type of rack and pinion which appears to possess marked merit. It is a modification of the Leibert design from which it differs mainly in the mode of operating the withdrawal of the plug and in the pitch of the segmental rack to give increased power of rotation."

In both cases the fundamental invention was that of the claimant and the improvements originated in the Government office.

Later, the Chief of the Naval Bureau of Ordnance reported that, if the patent which had been issued to an American officer named Davis were valid, no royalties could be claimed by De Bange, but that he believed that the Davis patent was

valid only to the extent of protecting certain improvements on De Bange, and in that case he considered De Bange's claim for royalties a proper one. It will be observed that the Chief of Naval Ordnance was encountering the same difficulty that presented itself to the Chief of Army Ordnance in the case at bar, namely, of deciding a complicated patent question, and ultimately the same course was adopted in both cases. We give below, in parallel columns, a letter directed by the Secretary of the Navy to De Bange's counsel, in response to a demand which they had made, and the letter directed by the Chief of Ordnance, U. S. Army, to the claimant at bar, on February 25, 1903, appearing on page 23 of the record:

De Bange:

"It appears that the matter is now in such a condition that it will in all probability involve not only questions arising under the patent issued to Colonel De Bange, but also those growing out of the claims affecting the rights of other patentees. Under these circumstances, the Department is of opinion that the full consideration and determination of these questions can

Leibert:

"Referring to your communication of November 5, 1902, upon the subject of breech mechanism for guns of 1895 model, I have the honor to state that the claims in the patent of Owen F. Leibert, owned by you, are so much involved with the original designs of Farcot and the patents to F. F. Fletcher and John W. Stockett that this Department does not feel that it is in a position to

be more certainly and equitably reached, and the rights of all parties concerned, as well as the government, more definitely ascertained and assured, through the medium of a court of justice. It is therefore suggested that the necessary proceedings for the consideration and adjustment of the matter by the Court of Claims be instituted."

pass on the legal aspect of the case. If the Bethlehem Steel Company will bring suit to establish the points involved, this office will lend its assistance in bringing before the court all documents on hand pertaining to the subject."

On this state of facts, this court, speaking through Mr. Justice McKenna, said:

"It is not possible to review the arguments by which the claimant asserts and the government denies the sufficiency of the facts as we have related them to constitute an implied contract between the claimant and the government. The ultimate contention of the government is that mere use of the patentee's invention with his knowledge does not create an implied contract in fact to pay for such use, but 'there must be (1) a use of it with the patentee's assent; and there must *also* be (2) an *agreement or meeting of minds* on the part of the patentee and on the part of the user *as to compensation for the use*, even though the amount of the compensation be not fixed.' These elements, it is insisted, were present in the Berdan case, which we have seen was

relied on by the Court of Claims; they are, it is further insisted, absent in the case at bar.

“But these elements do not have to appear by the explicit declaration of the parties. They may be collected from their conduct. The alternative of a contract is important to be kept in mind. The officers of the government knew of the De Bange invention and were aware of its great importance, and the purpose to deliberately take property of another without the intention that he should be compensated—in other words, to do plainly a wrongful act—cannot be imputed to them without the most convincing proof. Such proof does not exist in the present case. On the contrary, the record shows that compensation was contemplated. There was doubt as to the extent of it, because there was doubt as to how far the devices used were attributable to or belonged to De Bange, or whether they constituted an infringement of his patent, and therefore there was hesitancy and doubt, not as to compensation, but as to the amount and extent of it.

“We agree with the Court of Claims that there is resemblance between this case and the Berdan Case. In that case the court had no difficulty in adducing the assent of Berdan to the use of his invention. The court found more difficulty in inferring the assent of the government. The court said, by Mr. Justice Brewer: ‘While the findings are not so specific and emphatic as to the assent of the government to the terms of any contract, yet we think they are sufficient. There was certainly no

denial of the patentee's rights to the invention; no assertion on the part of the government that the patent was wrongfully issued; no claim of a right to use the invention regardless of the patent; no disregard of all claims of the patentee, and no use in spite of protest or remonstrance. Negatively, at least, the findings are clear. The government used the invention with the consent and express permission of the owner, and it did not, while so using it, repudiate the title of such owner.'

"Like comment may be made of the facts in the case at bar. It is true that the letter of William F. Folger, Chief of the Bureau of Ordnance, stated that while the gas check used by the government resembled in certain features De Bange's gas check, it differed from it materially in particulars which were original in the bureau. But this was not a denial of the use or the utility of De Bange's invention. Whether there was infringement the officer did not decide, but suggested that the 'applicant refer the matter to the Court of Claims.' Subsequently, the Acting Secretary of the Navy did deny infringement. But that position was abandoned and the Secretaries of War and the Navy 'suggested that the necessary proceedings for the consideration of the adjustment of the matter by the Court of Claims be instituted.' There were parallel circumstances in the Berdan Case.

"The invention of Berdan was an 'extractor-ejector' for use in breech-loading rifles, and that which was used by the government was devised by one of its employes. There was a difference between it and Berdan's device, but the officers of the government

doubted if the difference was material, and concluded that it was a matter for the courts to decide. It is true there was no assertion of right against the Berdan device in consequence of the difference between it and the device used by the government as, it may be said, there was in the case at bar by the letter of Admiral Ramsey of September 3, 1891. But the position taken in that letter was, as we have seen, abandoned, and it was declared that so far as the De Bange patent was valid, its claim for royalties was, in the opinion of the Bureau of Ordnance, a proper one, and would be sustained by the courts. This was in 1894. Prior to that time and afterwards the government continued to use the device. We think the Court of Claims had jurisdiction."

(D) *United States v. Berdan Fire Arms Co.*, 156 U. S., 552, applied to this case.

The case of *United States v. Berdan Fire Arms Co.*, 156 U. S., 552 is discussed in the preceding quotation from the De Bange case, so that an extended review of it is here unnecessary. An examination of the portion of Mr. Justice Brewer's opinion beginning on page 566 and extending to the foot of page 569, discloses that the case is similar to the De Bange case and to the one at bar, and is authority for upholding the jurisdiction of the Court of Claims in this case.

(E) The appellant's attempt to distinguish the De Bange and Berdan cases is fallacious. The Government used the Leibert patent knowingly.

On pages 98, 108-111, of its brief, the appellant undertakes to distinguish the De Bange and Berdan cases from the case at bar, by making an erroneous assertion to the effect that, in the De Bange and Berdan cases, the government used the claimant's device knowingly, whereas in the present case, Leibert's invention was used unwittingly. This assertion of want of knowledge of user by the government in the case at bar is made repeatedly and persistently throughout the appellant's brief, and forms a false premise upon which the principal structure of the appellant's argument is based. This is as appropriate a place as any at which to answer it.

The argument that the government used the Leibert patent unwittingly is negatived both by the transactions of the parties and by the patent situation.

Among the transactions of the parties we have: (1) the government's expression of interest in Leibert's application (p. 19); (2) the furnishing of full information with regard to the invention by the claimant to the Chief of Ordnance at his request, immediately following the issuance of the patent (pp. 19-20); (3) the obtaining of permission by the Chief of Ordnance to use Leibert's device on one gun (p. 20); (4) the letter of the Chief

of Ordnance of December 16, 1895 (p. 20) in which he said of model 1895: "This shows a third type of rack and pinion which appears to possess marked merit. It is a modification of the Leibert design from which it differs mainly" in two very minor particulars, viz., "the mode of operating the withdrawal block and in the pitch of the segmental rack to give increased power for rotation"; (5) the installation by the claimant, at the Government's request, of the 1895 model on fifteen guns manufactured by the claimant without reduction of the contract price by reason of decreased cost of manufacture (p. 21); and (6) the letter from the claimant to the Chief of Ordnance of November 5, 1902 (p. 22), calling attention to the use by the government of the Leibert invention and the reply of the Chief of Ordnance of February 25, 1903 (p. 23) in which he made no denial of such use.

The patent situation, also, is such as to impute to the Chief of Ordnance knowledge of the fact that he was using the Leibert invention.

A considerable part of the appellant's brief (pp. 81-96) is devoted to an effort to convince this court that the Chief of Ordnance supposed that the 1895 model was covered by the Stockett patents and by them alone, and further that this alleged supposition of the Chief of Ordnance was, in fact, correct. In our statement of facts (*supra*, pp. 129-133, 135-138), we have pointed out the relative significance of the Leibert and Stockett patents, and have shown that Leibert invented an entirely new and

unique operative breech plug mechanism, whereas Stockett's narrow detail inventions perform no function except as they are attached to and used in connection with Leibert's. An untrained eye can discover this, by a cursory examination of the patents in the record (pp. 24-47). As the court below remarked (p. 58):

"even to the unskilled it is indisputably apparent that the invention of Leibert covered by his letters patent was the real functioning element of the Stockett mechanism."

Are we to impute to the Chief of Ordnance, who is "constantly in contact with patent rights" (p. 50), a degree of ignorance and stupidity so great as to cause him to fail to recognize something that is "indisputably apparent," even to the unskilled? The Court of Claims found as a fact in the Berdan case (156 U. S., 558) that:

"The War Department is early and regularly informed of all improvements and inventions in fire arms and ammunition. It is aware of the state of the art at all times, and generally knows of all patents upon fire arms as soon as issued."

Doubtless this Court can take judicial notice of those facts in the case at bar.

In its effort to explain away the admission of the Chief of Ordnance (p. 20) that Stockett is a modification of Leibert, the appellant (p. 95 of its brief)

remarks that the Bureau of Ordnance had previously referred to the "Leibert modifications of the Farcot breech mechanism;" the inference being that Leibert was a modification of Farcot in the sense in which Stockett was a modification of Leibert. The reference is to a letter of the Ordnance Department appearing on page 7 of the record, which is part of the claimant's petition. The letter referred to is in reply to one from the company (p. 7) in which the company asked for the department's design "incorporating the Leibert improvement." In reply the Department sent some blue-prints relating to Model 1892, a model not otherwise heard of in this case, and said:

"These details cover both the Fletcher and the Liebert modification of the Farcot breech mechanism, as it is the intention to try both systems with this new 12-inch gun."

Farcot,—whose invention, incidentally, was not protected by an American patent, and, was therefore, open to public use (p. 47)—was one of the earliest students in this art and produced a breech operating mechanism covered by British patent No. 3402 of 1887 (p. 47), which discloses no compound wheel whatever. He has a simple operating wheel with worm teeth throughout and which could not engage a straight rack and without any means for imparting a direct pull for the purpose of withdrawing the plug.

The only sense in which Leibert could be consid-

ered a modification of Farcot was that both aimed to use a single operating wheel, by turning which continuously, all the desired motions would be obtained. But Farcot failed to provide any practicable mechanism for the army guns, because so much power was lost by his worm teeth acting on both racks that hand power could not be used. Leibert, on the contrary, by the brilliant new discovery of the compound tooth wheel acting with two faces of the same wheel teeth on two different kinds of racks, solved all the problems and gave all the desired advantages. Therefore, while both desired the same functions, the ordnance officers who discarded the one system and adopted the other, knew why they did this. They knew that the Leibert combination converted failure into success. Moreover, suppose that Leibert was a modification of Farcot in the very broad sense that both used a single wheel. What of it? Farcot had no United States patent and they knew that Leibert did have, and that Stockett was using the Leibert system.

As the court below said (p. 55):

"The Leibert device as adopted to breech-loading ordnance superseded all forms of mechanism theretofore employed to produce the intended effect. Its identity stands forth as emphatically as mechanical comparison can demonstrate. It was the conception of a device which no previous inventor had in mind and cannot under the authorities be discredited because it brought together in simple and compact form a combination of elements,

each of which had been theretofore used in a vain attempt to perform the exact functions Leibert's compound operating wheel performed. That it involved more than mechanical skill to evolve the device is pertinently emphasized by the fact that such an arrangement had never suggested itself to numerous investors assiduously engaged in the very art for a period of time bordering on a quarter of a century."

On the other hand, Stockett is a modification of Leibert in the sense that he made a narrow detail improvement which can have no operation or even existence independent of the device improved upon. Independent of Liebert, the Stockett device, to quote the court below (p. 58) is "absolutely impotent and valueless to perform the indispensable movements for which it was intended."

In his labors to explain away the admission of the Chief of Ordnance that Stockett was a modification of Leibert, the appellant's counsel says (p. 94) that the Chief of Ordnance stated that Stockett was a "third type," the inference being that it was coordinate with the two preceding types, which were Liebert and Fletcher. The Chief of Ordnance said no such thing. He said (p. 20) that the *1895 model*, in which both Leibert and Stockett were present, was a third type, and in the very next sentence said that this third type was a *modification of Leibert*, and then proceeded to state the particulars of that modification, which consisted, as we have seen, of Stockett's two slight improve-

ments that were incapable of existence except in connection with the Leibert mechanism.

Stockett was Chief Draughtsman of the Bureau of Ordnance (p. 20). The appellant's brief (p. 100) admits that the Stockett invention was "developed in the Bureau of Ordnance by one of its own employes;" that the Bureau believed that it owned the invention, and constantly referred to it as the "Department's design." It will be remembered that Stockett had been confronted by the Patent Office with the Leibert patent and "a contest of considerable extent ensued" (p. 58), as a result of which Stockett was compelled—(as an examination of the patents at pp. 24-47 of the record demonstrates)—to limit his own narrow claims to detail changes on the Leibert invention. It is difficult to see how there could be more direct notice to the Bureau of the presence of Liebert's invention in the 1895 model than this.*

The appellant says that the letter from the Bureau of Ordnance to the claimant of November 5, 1902 (p. 22), inviting the bringing of this suit, shows that the Government did not know it was using the Leibert invention. This Court has answered that contention in its interpretation of a similar letter in the De Bange case. We have printed the two letters in parallel columns (p. 154 *supra*). The Bureau of Ordnance could not fail to know that it was making use of patented inventions. As the Court below said (p. 50):

*This argument is based on the Bureau's belief that it owned the Stockett patent. The claimant has never believed so.

“The Department was not constructing a device; it put forth absolutely no efforts to bring into being a segregated mechanism to which it claimed title.”

What the Department's letter of November 5, 1902, indicates is that the Chief of Ordnance was unable to determine the relative values in the 1895 model of the several patents before him, but as the Court of Claims said (p. 50):

“We are not to presume the defendants intended to avail themselves of the highly technical information contained in the respective letters patent that they might thereby infringe one or all.”

This is in line with the remark of Mr. Justice McKenna in the *De Bange* case (*supra*) that:

“The purpose to deliberately take property of another without the intention that he should be compensated—in other words to do a plainly wrongful act—cannot be imputed to them [the ordnance officers] without the most convincing proof.”

(F) *Russell v. United States*, 182 U. S., 516, distinguished.

The Government relies strongly upon the case of *Russell v. United States*, 182 U. S., 561, and devotes four pages of its brief (pp. 101-104) to an alleged comparison of the facts in that case with those in the case at bar, graphically presented in

parallel columns. This parallel is not a true one. The Russell suit came up in this Court on an appeal from a judgment of the Court of Claims sustaining a demurrer by the United States. The Court held that the petition showed on its face that the Government did not adopt and use the claimant's invention. In the case at bar, the Government filed a demurrer which was overruled; the case was tried, and comes here on an appeal from a judgment on the merits. In Finding XV on the merits the Court of Claims found as a binding fact:

"The combination of devices 1, 2 and 3 of the said Leibert patent are found in the said model 1895 breech mechanism manufactured and used by the defendants as in Finding VI hereinbefore set forth." (P. 48.)

This negatives the Government's statements in paragraphs 5, 6 and 9 (pp. 101-103) of the attempted parallel, where it is three times repeated that the War Department did not adopt or use the Leibert mechanism. Thus the parallel is turned into an antithesis in its vital part, and automatically distinguishes the Russell case from the one at bar. We have before remarked that the Government devotes a large part of its argument to disputing the fact found in Finding XV. We cannot forbear to express astonishment.

(G) *Schillinger v. United States* 155 U. S., 163; *Harley v. United States* 198 U. S., 229, and other authorities cited by appellant distinguished or commented upon.

In *Schillinger v. United States*, 155 U. S., 163 cited by the appellant on pages 80 and 106 of its brief, the Government officers who are accused of having used the claimant's patent consistently refused to recognize any rights in the claimant, and the claimant, so far from consenting to the user, steadily protested against it. Every element of contract was lacking, and every element of tort was present. In the opinion, Justice Brewer held that the acts of the Government officers were tortious, and distinguished the case from that of *United States v. Palmer*, which we have cited.

In an effort to bring the case at bar within the decision in the *Schillinger* case, there is a very curious argument at page 106 of the appellant's brief. It is to the effect that the permission given the Government by the Bethlehem Company to use the Liebert device on one gun "without compensation" was equivalent to a protest against its use on any other gun with compensation. In other words, if a taxi driver were to say, "You may use my cab for one drive around the Speedway without pay," that is equivalent to saying, "I protest against your ever hiring me in future at my regular rates." The appellant also says (pp. 106-107) that:

“When the Bethlehem Company conceived the idea that the guns which it was making under contract with the Government and which it believed the Government was making elsewhere, were covered by its patent, it again protested against such use.”

The reference is to the claimant's letter of November 5, 1902 (p. 22). We invite the Court to inspect the letter and discover the protest.

In *Harley v. United States*, 198 U. S., 229, relied upon by the Government, the point decided had no similarity to anything in the case at bar. An employe of the Bureau of Engraving and Printing had obtained a patent for an invention of which the Bureau made use. The employe supposed that he would be compensated. The Chief of the Bureau took for granted that, as the invention had been developed in the Bureau, it belonged to the Government. This court speaking through Mr. Justice McKenna, held that there was no meeting of minds. We are unable to discover the application of the Harley case to the one at bar.

Bedford v. United States, 192 U. S. 217, cited by the appellant, is so remote from the case at bar that the want of similarity puts us at a loss to distinguish it. The claim there was that the construction by the Government of certain works in the Mississippi River, which made no change in the course of the stream, but accelerated the current, amounted to an exercise of the right of eminent

domain, because the accelerated current eroded and overflowed claimant's land. Speaking for the Court, Mr. Justice McKenna held that since the Government, when it committed the act complained of, could not have foreseen the damage which ensued, there was no exercise of the right of eminent domain.

The Horstman and Natron Soda cases, decided at this term and cited by appellant, were similar to the Bedford case and rest upon its authority.

The same observations apply to this case of *Tempel v. United States* 248 U. S., 121, cited by the appellant, which was also an overflow case. The only point in it having any bearing on this case is the language which we have quoted at page 146, *supra*. Mr. Justice Brandeis in the opinion distinguished the Tempel case from the Lynah case, on which we rely here, saying (p. 131):

“The case at bar [Tempel case] is entirely unlike both the Lynah Case and the Cress Case. In neither of those cases does it appear that, at the time of taking, there was any claim by the Government of a right to invade the property in question without the payment of compensation. Under such circumstances, it must be assumed that the Government intended to take and to make compensation for any property taken, so as to afford the basis for an implied promise.”

The case of *Sanquinetti v. United States*, 55 Ct. Cl., 107, quoted on page 86 of the appellant's brief, is now pending in this Court on appeal.

We have now noticed all the authorities mentioned in the appellant's brief except *Corning v. Burden*, 15 Howard 252; *Ney Manufacturing Co. v. Superior Drill Co.*, 56 Fed., 152 and *Goodyear v. Dunbar*, 1 Fish. Patent Cases, 174. These are cited by appellant on page 92 in support of its proposition that "The patenting of the Stockett design would be evidence to them [the ordnance officers] that it was not covered by any prior patents."

As is well known to any one considering patented devices, the grant of a patent on an improvement to a patented machine does not give such patentee the right to use the machine. The United States Patent Office has nothing to do with such questions. The only question before it is whether an applicant has made a patentable improvement. If he has, the patent is granted irrespective of what prior and broader patents cover the machine so improved. What appellant apparently means is that the grant of a later patent raises a presumption of patentable difference between two patents. Such presumption is rebuttable and is only applied by the courts where both patents under consideration are late patents in a crowded art, both narrow and of small scope. No such presumption can arise here, where Leibert's invention is broadly

new, and, if it could, it was completely rebutted, as shown by the conclusive finding of fact thereon by the Court of Claims.

We repeat that, as engineers, the ordnance experts knew that the "1895 Model" contained the *things* first combined and used by Leibert, *i. e.*, the compound wheel with its double faced teeth co-acting with a wormth tooth curved rack and a spur tooth straight rack. As to *scope* of the various claims, they disclaimed the legal capacity to judge and, in effect, recommended an amicable suit to decide the relation thereof.

II.

The amount found to be due by the Court of Claims is correct.

In the appellant's brief (p. 111) the statement is made that:

"it appears in the findings (Finding II, VII, VIII; Opinion on Demurrer, Rec. p. 14, par. 4), that some of the guns were manufactured before the Bethlehem Steel Company came into existence and during the life of the Bethlehem Iron Company, but how many of the guns were manufactured after the Bethlehem Iron Company went out of existence does not appear. Since an unliquidated claim against the Government is not assignable, the Bethlehem Steel Company has no right of action in connection with those guns which were manufactured before it came into existence."

The references given by appellant do not support the statement, but if appellant's statement were correct the Act of Congress of June 6, 1902, quoted on page 22 of the record, would be a sufficient answer to the point.

There is nothing in the record on which—even accepting appellant's erroneous view of the statute—an assignment of errors could be based, for it does not appear whether any of the guns claimed for were made prior to the organization of the claimant company. This point is really a part of the next one, under which we shall treat it more fully.

III.

The claimant, the Bethlehem Steel Company, is entitled to recover in this action.

At pages 111-112 of its brief, the appellant argues that the implied contract in this case, having been made with the Bethlehem Iron Company, terminated upon the liquidation of that company. The provision of the Act of Congress approved June 6, 1902 (32 Stat. L. 308), pursuant to which all contracts of the Bethlehem Iron Company (with one specific exception) survived to the Bethlehem Steel Company is quoted in full in Finding IX at page 22 of the record. In the appellant's brief (p. 112) there is a purported quotation of part of it, in which, by the use of asterisks, it is

made to appear that the giving of a bond was required in all cases, as a condition of the substitution, although no point to that effect is made in the argument. The appellant's counsel has eliminated parts of two sentences, indicating the hiatus by asterisks. In so doing he omits an essential phrase from the apodosis of the second sentence, thus ingeniously giving the Act of Congress a meaning which it will not bear. The first sentence preserves the rights of the Government; the second, those of the contractor.

We give below in parallel columns the Act itself, and the quotation from it as given in the appellant's brief.

Act of June 6, 1922:

All contracts of the Bethlehem Iron Company, of South Bethlehem, Pennsylvania, heretofore made between it and the United States except the contract of November seventh, eighteen hundred and ninety-one, for one hundred eight, ten and twelve inch guns, shall be completed by its successor, the Bethlehem Steel Company, or its successor, which has acquired or may acquire

Appellant's quotation:

All contracts of the Bethlehem Iron Company * * * shall be *completed* by its successor, the Bethlehem Steel Company * * * upon giving good security * * * conditioned for the performance by it of said contracts * * *.

all of its assets and has assumed or may assume all of its liabilities under the said contracts; and the said Bethlehem Steel Company, or its lawful successor, upon giving good security in the same form and amount, conditioned for the performance by it of the said contracts, shall be substituted therein for the said Bethlehem Iron Company and be entitled to exercise all rights thereunder which the said Bethlehem Iron Company had or would have had if it had continued in existence.

The Act says that the Bethlehem Steel Company shall give security for the performance of the contracts of its predecessor "in the same form and amount" (an expression omitted in appellant's quotation) as the security which had been taken to insure the performance of the original contract. Where no security had been taken from the Bethlehem Iron Company, obviously none need be taken from the Bethlehem Steel Company. The form and amount of the undertaking given by the Steel Company must be identical with the one pre-

viously given by the Iron Company and can be determined in no other way.

The Act is in general terms and covers all kinds of contracts, implied and express, the purpose being, as indicated in the Act, that contracts of the Iron Company shall follow and attach to its assets in the hands of its successor. The Bethlehem organization, as the court is doubtless aware, is the largest producer of war material in the world. The design of Congress was that, in the reorganization of that company, the Government should preserve all its rights in the company's production of the means of national defense, and should continue subject to all liabilities correlative to such rights. This is shown by the position of this legislation. It is part of an Act entitled:

“An Act Making appropriations for fortifications and other works of defense, for the armament thereof, for the procurement of heavy ordnance for trial and service, and for other purposes.”

It is included in a section of that Act which contains an appropriation for finishing and assembling 8, 10 and 12-inch guns at the Army Gun Factory. If the implied contract in this case had terminated with the liquidation of the Iron Company, the War Department would have been unable (without committing a tort) to install the Leibert device on these guns.

There is in the Act no justification whatever for the appellant's contention that only those contracts were transferred which required the performance of overt acts by the Bethlehem Steel Company. A contract is not "completed" until payment is made and the receipt of final payment constitutes the final act by the contracting party entitled to such payment. Under appellant's theory, if there had been an express written contract between the Government and the Bethlehem Iron Company, and the Iron Company had completed the work and delivered all of the material called for, when it went out of existence, the Steel Company would not be entitled to collect the payment. Surely it needs no argument to show that the Act of Congress would authorize payment in such a case. The difference between an express and implied contract lies solely in the mode of proof. There is no difference in the nature and incidents of the two forms of contract. (*Lawson on Contracts*, Section 39, and cases there cited.) Besides, it is obvious that the Bethlehem Steel Company did overt acts under the contract, by consenting continuously to the use by the Government of its patented device on all the guns made after its organization.

Appellant's point with regard to the necessity for "overt acts," and its inferential point that the giving of a bond was a necessary preliminary to the transfer of the contract, were not made in the Court below, but appear for the first time in the appellant's brief. In *Missouri Pacific Ry Co. v.*

Fitzgerald, 160 U. S., 556, 575, Chief Justice Fuller said:

“An assignment of errors cannot be availed of to import questions into a cause which the record does not show were raised and passed on in the court below.”

IV.

Reply to appellant's brief.

In the course of the foregoing presentation, we have answered most of the contentions advanced by the government, though not in the order in which they appear in its brief. For the convenience of the court, we now take up the appellant's arguments *seriatim* as they appear in its brief, referring to the pages of this brief in which the answering arguments are to be found, and answering such of appellant's arguments as we have not already considered.

1. Appellant's first point (Appellant's brief, pp. 70-75):

“There was no tender of the Leibert invention for such use by the government as is made the basis of this suit.”

“Bethlehem letter of July 5, 1894, was tender of use of the Leibert breech mechanism on only one trial gun on which no claim is based (p. 70).

“Bethlehem letter of February 1, 1898, was no tender of use of the Leibert invention” (p. 71).

“The Bethlehem letter of November 5, 1902, was not a tender of the Leibert invention, *but shows conclusively that if the govern-*

ment used the Leibert invention in the guns which it built on which this suit is based, it did so with no intention to use and no idea it was using the Leibert invention and against the desire of the Bethlehem Iron Co. and without its permission'' (p. 75).

We do not dispute any of the foregoing except the portion italicised and the general conclusion that there was no tender. This suit is founded on an implied, not an express, contract.

The portion italicised has been answered on pp. 135-138, 159-166 of this brief.

We desire to point out that the letters from the claimant to the Department of July 5, 1894, and February 1, 1898, which are quoted in full by appellant (pp. 70, 72) do not appear in the findings of the Court below. The government takes them from the petition, though in its brief below it complained because they were there. Of course, we do not object to the use by the government of the allegations of the portion, but we do object to having them treated as the *sole evidence* of the facts alleged. The Court below had before it not only the petition, but the evidence, and, on that record, made findings of fact which are not reviewable. We object to the assumption that the findings on the subjects to which these letters relate—that is to say, the tender by the claimant of its invention to the government—were based solely upon the letters set out in the petition. It does not even appear that those letters were offered in evidence.

It is by the findings that this Court must be guided.

We have argued the question of implied contract so fully throughout this brief that it is unnecessary to review it again.

2. Appellant's second point (Appellant's brief, pp. 82-84):

"The government did not use the Leibert mechanism."

"The government used the Stockett mechanism."

Our answers are to be found on pages 129-133, 159-166, 167 of this brief. We again refer the court to Finding XV (p. 48) of the Court of Claims.

3. Appellant's third point (Appellant's brief, pp. 84-89):

"There must be a definite intention to take private property for public use before a contract, other requirements being satisfied, will be implied."

Admitted, as a general proposition of law, though we think the principle is inartificially stated and needs qualification and explanation. The intention can be inferred from the facts. It is here proven by the statement of the Chief of Ordnance that the 1895 model is "a modification of the Leibert design."

4. Appellant's fourth point (Appellant's brief, pp. 90-99):

"There was no intention on the part of the government to use the Leibert invention."

"All the circumstances surrounding the use of the Stockett mechanism indicate that the officers of the Bureau of Ordnance had no idea that they were using a mechanism covered by the Leibert patent."

Our answers are to be found on pages 129-133, 135-138, 159-167 of this brief.

5. Appellant's fifth point (Appellant's brief, pp. 99-100):

"The government believed it had a proprietary right to use the Stockett mechanism."

We treat this as an admission by government's counsel and have based an argument upon it appearing on page 165 of this brief. However, although the government believed that it had a proprietary right to Stockett, the claimant did not think so, and accordingly paid Stockett for the use of his patent on the fifteen guns which it made under the 100-gun contract.

6. Appellant's sixth point (Appellant's brief, pp. 100-105):

"Comparison between the case at bar and Russell v. United States, 182 U. S., 516."

Our answer is to be found on pages 166-167 of this brief. We again refer the court to Finding XV, p. 48 of the record.

7. Appellant's seventh point:

On pages 106-109, the appellant has referred to several cases (Harley v. U. S., 198 U. S. 228; Schillinger v. U. S., 155 U. S. 163; U. S. v. Palmer, 128 U. S. 262, and Berdan Firearms Mfg. Co. v. U. S., 156 U. S. 552), which we have discussed on pages 149, 158, 168-172 of this brief.

8. Appellant's eight point (Appellant's brief, pp. 109-111):

"United States v. Societe Anonyme distinguished."

We have discussed this case at length on pages 151-158 of this brief.

9. Appellant's ninth point (Appellant's brief, pp. 111):

"Even presuming (arguendo) the existence of a contract, the Bethlehem Steel Company has no right to recover for those mechanisms which were manufactured before said company came into existence."

This is the subject of Point II, p. 172 of this brief.

10. Appellant's tenth point (Appellant's brief, p. 111):

"The Bethlehem Steel Company has no right to recover in any event."

This is the subject of our Point III, p. 173 of this brief.

V.

RECAPITULATION.

The government knew that it was making use of privately owned patents. It knew that it had developed nothing of its own, except possibly the modest detail improvements or changes of its servant Stockett; it knew that the patentee whose invention it was using was entitled to compensation; it was dealing with patents and had several under consideration and made its selection; it knew that it had selected and used the Leibert device, with the consent of the owner thereof; and it was proceeding without a thought of denying compensation to the true owner of the patent. But it felt unable to determine whether the patents of other inventors were involved in the mechanism, and therefore suggested suit. On these facts the claimant is entitled to recover.

Respectfully submitted,

ROBERT C. HAYDEN,
CLARENCE P. BYRNES,
GEO. W. DALZELL,
Of Counsel for Appellee.